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JULY, 1960
VOL. III, NO. 3

Problems of Economics

Selected Articles from
Soviet Economics Journals in English Translation

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THE ECONOMIC RESEARCH INSTITUTE OF THE USSR STATE PLANNING COMMITTEE: American Economists on the Competition Between the USSR and the USA *(Planovoe Khoziaistvo,* No. 1, 1960).

V. STAROVSKII: On the Methodology of Comparing Economic Indices of the USSR and the USA *(Voprosy Ekonomiki,* No. 4, 1960).

IA. IOFFE: The Level of Labor Productivity in the USSR and the USA *(Planovoe Khoziaistvo,* No. 3, 1960).

M. BRONSHTEIN: Distribution of Differential Rent Under Socialism *(Nauchnye Doklady Vysshei Shkoly, Ekonomicheskie Nauki,* No. 1, 1960).

A. BOIARSKII: Mathematical Methods and the Requirements of Marxist Economics *(Planovoe Khoziaistvo,* No. 1, 1960).

V. MOSKALENKO: Organized Recruitment of Workers *(Sotsialisticheskii Trud,* No. 4, 1960).

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Problems of Economics

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PROBLEMS OF ECONOMICS

Selected Articles from Soviet Economics

Journals in English Translation

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- VESTNIK LENINGRADSKOGO UNIVERSITETA, SERIIA EKONOMIKI – JOURNAL OF LENINGRAD UNIVERSITY, ECONOMIC SERIES
- VESTNIK MOSKOVSKOGO UNIVERSITETA, SERIIA EKONOMIKI – JOURNAL OF MOSCOW UNIVERSITY, ECONOMIC SERIES
- VESTNIK STATISTIKI – JOURNAL OF STATISTICS
- VNESHNIAIA TORGOVLIA – FOREIGN TRADE
- VOPROSY EKONOMIKI – PROBLEMS OF ECONOMICS
- MIROVAIA EKONOMIKA I MEZHDUNARODNYE OTNOSHENIIA – WORLD ECONOMY AND INTERNATIONAL RELATIONS
- NAUCHNYE DOKLADY VYSSHEI SHKOLY – EKONOMICHESKIE NAUKI (NDVS) – SCIENTIFIC PAPERS OF HIGHER EDUCATIONAL INSTITUTIONS, ECONOMIC SCIENCES
- PLANOVOE KHOZIAISTVO – PLANNED ECONOMY
- PROMISHLENNO-EKONOMICHESKAYA GAZETA - INDUSTRIAL-ECONOMIC GAZETTE
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COMPARISONS OF SOVIET AND US ECONOMIES

Planovoe Khoziaistvo, No. 1, 1960

IE ECONOMIC RESEARCH INSTITUTE OF THE SR STATE PLANNING COMMITTEE:

ierican Economists on the Competition Between the SR and the USA

the course of September-October 1959 the
t Economic Committee of the Congress of the
ed States published a new volume of papers by
erican economists under the title of Comparisons
e United States and Soviet Economies. (1)

he volume consists of nine chapters: Problems
oviet-United States Comparisons; Population and
or Force; Industry; Transportation; Agriculture;
els of Living and Incentives in the Soviet and
ed States Economies; National Income and Prod-
Foreign Economic Activities; Evaluation of the
sian Economic Threat. The 26 papers included
ese chapters were prepared by a large group of
erican economists engaged in the study of the
et economy.

milar volumes of papers on this subject were
ished earlier by the Joint Economic Committee
ongress, namely in 1955 and 1957. The first of
e was entitled Trends in Economic Growth: A
parison of the Western Powers and the Soviet
, and the second, Soviet Economic Growth: A
parison With the United States.

e new collection is somewhat different from
ormer two. Previously, the reports pursued
ly propagandistic aims; their authors sought to
mize the achievements of the Soviet Union in
y possible way. Now, however, in the majority
pers an attempt is made to appraise facts so-
y, to understand the economic life of the Soviet
n, and to explain the reasons for its rapid
ress.

is not difficult to understand what brought about
change to a more realistic appraisal of facts.
rican politicians and economists are beginning
derstand more and more that the Soviet Union
real candidate for first place in the level of
omic development, and, therefore, they are com-
d to make a more serious study of the Soviet
economy and the prospects of competition between the two systems.

The Soviet Union's outstanding successes in economic, scientific, technical and cultural development offer such convincing proof of the vitality and advantages of the socialist system that to close one's eyes to this means to ignore reality. The truth is paving a way for itself. Today the whole world sees that the Soviet Union has become a mighty industrial power which is successfully solving the economic task of overtaking and outstripping the most highly developed capitalist countries in per capita output.

The authors of these papers are particularly troubled by the tempo of Soviet economic development. They realize that this makes it quite possible for the Soviet Union to outstrip the United States. "...the high rate of industrial growth motivates Soviet economic society. Continuation of their rapid industrial growth makes increasingly credible the Soviet claims for overtaking US levels of industrial production at some future date," writes John P. Hardt, one of the authors. "In recent years, Soviet output — both total and per capita — has grown at rates considerably in excess of those in the United States," says Gerhard Colm in his paper "Evaluation of the Soviet Economic Threat." "... the yearly percentage increase in Russian gross national product during the past decade has significantly exceeded that of the United States," writes Howard C. Peterson in his paper "Soviet Economic Growth and United States Policy."

Admissions of this kind permeate the majority of the papers submitted to the Congress. The authors also devote much attention to the material incentive in Soviet economic development. Previously, American economists asserted that only a capitalist economy creates material incentives for the development of production and the growth of scientific and engineering personnel, but now they have to admit that a socialist economy creates more effective stimulants for the development of production. Joseph S. Berliner writes: "The ability of the Soviet government to maintain, through the planning system, a condition of permanent over-full employment is one of the greatest economic assets of the regime."

Many of the papers compare the systems of training scientific and engineering cadres in the USSR and the USA. They are unanimous in the view that the Soviet Union has certainly surpassed the United States in this respect. In his paper, "A Comparison of Incentives in the Economic Systems of the United States and Soviet Russia," Benjamin A. Javits writes: "A great stress is laid upon the advancement of scientists, engineers and physicians in the USSR. Education in this country is considered almost holy in practice. Great sums of money are poured into the educational system. Academic accomplishment is one of the outstanding efforts of the Soviet government."

A comparison of Soviet and American managerial staffs in industry is not in favor of the United States either. David Granick writes: "There is a considerably higher proportion of college graduates among Soviet than among American managers ... Of the college graduates, a much larger percentage of the Russians have engineering degrees ... Soviet college education provides a firmer factual base than does American ..."

A special paper compares living standards and wages in the Soviet Union and the USA. Its author, Lynn Turgeon, is forced to admit: "Each year a potential develops for raising levels of living in the Soviet Union." He writes that the USSR and the USA "can in fact provide equal standards of living." [The latter quotation is retranslated from the Russian — editor.]

Forced acknowledgements of this kind are not uncommon in the papers submitted to the Joint Economic Committee of the Congress. However, this collection also quite frequently contains some flagrant distortions of the very essence of the socialist economic system, its principles and planning methods, rate of development and the well-being of the Soviet people. The authors also take great pains to skip over the vices and ulcers of the capitalist economy.

The facts are particularly viciously distorted in portraying Soviet reality and the laws governing the competition of the two systems when comparing the indexes of economic development of the USSR and the USA, the levels and rates of growth of the two countries and the aims of developing production under socialism and under capitalism. We shall deal with these questions.

Futile Attempts to Confuse the Question of the Possibility of Comparing Economic Developmen in the USSR and the USA

Some of the authors (Robert W. Campbell, Hans Heymann) seek to create the impression that ther simply are no objective indicators of the competition of the two systems and that either party can, as it were, arbitrarily appraise the results of the competition. "We are beginning to ask ourselves some searching questions about the meaning of th economic competition with the USSR," writes Han Heymann. "We have begun to suspect that ... the race is not necessarily a meaningful contest for u and perhaps we should not even be running on the same track." This statement seems to imply a growing fear of the course and outcome of the ec nomic competition of the two systems. In fact He mann's words show a desire to quit the track on which the Soviet Union is quickly overtaking the USA. But that can't be done!

Some papers obviously strive to mislead the reader and have him believe that no reliable data are available on the rates of growth and levels of the USA and the USSR economies. However, the advantages of the socialist method of economic de velopment over the capitalist are most evident in the rates of growth. Heymann himself admits th this aspect of the problem troubles him most: ". such rapid Soviet economic progress would exercise fascination and appeal in the vast parts of th world where speedy economic development has b come virtually a prerequisite to political surviva The spectacle of a Soviet economy successfully pursuing rapid economic growth with a sense of u most urgency is bound to hold strong attractions for the less developed countries and would lend conviction to the Soviet claim that in the age of i dustrialism its own style of planned economy is superior to the market economy of the West and that its example consitutes a relevant model of e nomic development for all the underdeveloped world."

Hence, Heymann's attack on the category of th rate of production growth. In his view "... the ra of growth offers no meaningful standard for prac tical power calculations."

But can the economic power or rather the economic potential of a country be considered from static point of view? Decidedly not. Things change: the balance of forces today is not what i was yesterday, and tomorrow it will not be the same as today. And the criterion which enables

comprehend the constantly changing balance of
ces, and consequently the forces themselves, is
rate of growth of production. That is the vital
ex of the comparative merits of economic sys-
ns and the fundamental criterion for correctly
raising the prospects of their competition.

nother American economist whose paper is also
luded in the collection, Robert Campbell, also
ks to convince the reader of the unreliable na-
e of any comparisons between the economies of
USSR and the USA. Moreover, he refers to the
erences in the methods of determining the out-
of different types of goods in the USSR and the
A, and also to the heterogeneity of certain goods.
mpbell asserts that one cannot be sure of the
rectness of a comparison even when dealing
h physical output data, that such comparisons
e always subject to some qualifications.”

urther, Campbell cites hypothetical figures for
gross national products of the USA and the USSR
culated in a comparable currency, but for dif-
ent structures of production: in one case, the
erican; in the other, the Soviet. There was a
erence of some 16% between the two cases. On
s basis, Campbell draws the conclusion that “the
stence of this problem allows a certain degree of
jective latitude to the person making a compari-
. In comparing aggregates, or in measuring
es of growth in each system, he has the choice of
ny alternative weighting systems, with no clearly
ined theory to indicate that one of them is better
n the other.”

he object of this maneuver is to convince the
der that it is impossible, with any degree of
cision, to establish when the Soviet Union will
ch the American level of production. Campbell
tes: “Because of the wide range of relative
es that one can start with, and the wide choice of
wth rates (reflecting in both cases the index
nber problem) it is possible to determine a pe-
d for the catching-up process varying from a
ade and a half to four or five decades.”

hus, American economists have invented the
a of the alleged impossibility of comparing the
exes of growth of the US and Soviet economies to
fuse and distort the question of the actual level
conomic development of the respective coun-
s and the amount of time which the Soviet Union
require to overtake and outstrip the USA.

urthermore, the authors of the papers juggle
statistical categories and concepts and asser-
s about the provisional nature of statistical
parisons in order to impress upon the reader
notion that all calculations of the comparative
els of production in the USSR and the USA, the
es of economic development and the prospects
of competition between them are unreliable; they do not generally give any grounds for deciding who is actually winning in the economic competition. True, Campbell says: “It would be a source of great chagrin to the author if this listing of obstacles should be taken as a justification for a belief that it is hopeless or pointless to undertake such comparisons.” But this is idle talk. For who cares about comparisons which cannot be relied upon? What sense is there in time limits ranging from 15 to 50 years?

Soviet economists proceed from the assumption that there are no insoluble questions and insurmountable difficulties in comparing levels and trends of economic development in the USSR and the USA. The studies of our economists show that in spite of inevitable statistical inaccuracies the results obtained make it possible to draw quite definite conclusions about the relative economic strength of the USSR and the USA and to predict more or less definitely when the Soviet Union will be able to outstrip the United States economically.

There are, of course, a number of social and statistical difficulties which cannot be brushed aside. But economic statistics is a science precisely because it undertakes to overcome the difficulties of calculating and comparing indices of economic development. Otherwise it would be simple arithmetic and professors would have nothing to do here.

Having calculated the gross product of the USA and the USSR for differing structures of production Campbell arrives at varying results and says: there can be no simple answer; it is a blind alley. It is no blind alley, Mr. Campbell. You used only one method of deriving comparable indicators of the social product of the USSR and the USA. There are other methods: the method of weighted physical output, the method of evaluating the purchasing power of money, the method of determining employment and productivity of labor. Make use of all these methods, make adjustments in the divergent data and you will see that the calculations lead towards a quite definite magnitude. Why do you see an insoluble problem even in such a comparatively simple matter as comparing the volume of production of individual commodities? The data on production of electric power, for example, are published in the USSR generally in terms of gross output and in the USA in terms of delivery to consumers; the width of cotton fabrics in the USA is 40 inches and in the Soviet Union, 30 inches. And you are mystified, Mr. Campbell: how can this data be compared?

But both Soviet and American statisticians have long known of these differences and long ago discovered ways of achieving full comparability of physical output of major commodities in the USSR and the USA. This is no special problem. It is ordinary statistics.

If Soviet economists were to take the position of the authors of this collection it would be possible to pose more fundamental reasons for the difficulties of comparing the Soviet and US economies. How, for example, is the exploitation of the working people in the USA and their uncertainty about the future to be reflected? How are we to reflect the competition and anarchy of production, the parasitism and luxury of the ruling classes? And, on the other hand, how are we to evaluate the numerous social benefits enjoyed by the working people of the USSR?

Naturally, in comparing the economies of states with differing social systems it is difficult to take everything into account. But we can and should take into account the fundamental things — the achieved level of development of the productive forces, the trends and prospects of their growth. This is precisely what is necessary in order to estimate correctly the prospects of the economic competition between socialism and capitalism.

Falsification of Data on Rates of Growth and Levels of Economic Development

Having made a thorough and profound analysis of the trends of economic development of the USSR and capitalist countries, the 21st Congress of the CPSU concluded that by the end of the current Seven-Year Plan period the Soviet Union would exceed the present level of industrial output in the USA in some of the most important types of goods, and approach it in others. The decisions of the Congress point out that the Soviet Union's superiority in rates of growth of production provide a real basis for it to overtake and outstrip the per capita level of production in the United States in the course of approximately five years following 1965. Thus, by that time, and perhaps even sooner, the Soviet Union will take first place in the world both in total and per capita production, thus ensuring the highest living standard in the world for its population. This will be an epoch-making victory of socialism in the peaceful competition with capitalism.

The conclusions drawn by the 21st Congress of the CPSU on the question of how long it will take the USSR to overtake and outstrip the USA in the economic field have attracted the close attention of economists in the capitalist countries. Both Soviet and foreign economists clearly understand that an estimate of the time required for the Soviet Union to solve this fundamental economic task depends on two factors: 1) on the ratios of USSR to USA industrial and agricultural production; 2) on the p sible rates of economic development of the USSR and the USA in the coming decade. It is only natu al that the papers submitted to the US Congressio al Committee devote much attention to this matte The papers which deal with the problems of comparing the levels and rates of industrial development of the USSR and the USA include one by Pro G. Warren Nutter of the University of Virginia an a statement by the US Central Intelligence Agenc Chief, Allen Dulles.

Mr. Nutter has been misrepresenting reality a disorientating American public opinion for quite long time. In his biased and unscrupulous pseudo scientific investigations he is guided by the follow ing principle: if the conclusions contradict the facts, all the worse for the facts. In this particul case he has set himself the task, no matter what difficulty, of minimizing the actual level of produ tion of the USSR as compared with that of the US To achieve this he undertakes three scientific forgeries: 1) he distorts the level of industrial development in Russia and the USA in 1913; 2) he di torts the actual rate of growth of the USSR betwe 1913 and 1955; 3) he establishes a relationship between the level of industrial output of the USSR a the USA which has nothing in common with realit

The USSR Central Statistical Administration h done much in the way of calculating the compara volume of total industrial production of Russia a the USA in 1913. These data show that gross industrial output in Russia in 1913 was 12% of the level. In individual items, Russian output in 191 was as follows (in % of the USA level): electric power 8.4, coal 5.6, steel 13.3, locomotives 9.7, railroad cars 5.2, cement 9.5, paper 5.9, cotton fabrics 31.3, woollen fabrics 21.8 and footwear 22.6.

Many bourgeois economists, including Nutter, consider the Central Statistical Administration data on the growth of industrial output in the USS for individual items to be correct (that is something at least!) but they cannot stomach the gene index of growth of industrial production in the US which shows a vast increase in commodity outpu Therefore, each thinks it his duty to "construct" his own index for the USSR. Seton (Britain) considers that Soviet industrial output increased 12 times from 1928 to 1955, Hodgeman (USA) thinks it rose 10 times and Nutter only 5.6 times. Actu ally, industrial output in the USSR increased 21 times over that period. (2)

Such substantial divergences between the data of other bourgeois economists and Nutter's estimates would have alerted anyone, but not him. thinks that the other bourgeois economists are

ggerating the actual rate of growth of Soviet in-
try by 50 to 100% and that he, Nutter alone, as
'ere, gives the precise results.
.educing with one stroke of the pen the growth of
iet industrial output by almost four times, without
slightest effort Nutter evolves the following sen-
.onal conclusions (3): 1) before the revolution
sia developed faster than the Soviet Union; 2)
n industrial development in the USA was at the
sent Soviet level, it also advanced more rapidly
i the USSR. But if that is so why should con-
ssmen worry? Why do they, year after year,
:e a closer study of the rates of, and the factors
lved in, Soviet economic growth?
'he explanation is quite simple. No one believes
ter's estimates. Indeed, Nutter says that his
mate of the general index of production in the
R is based on subindexes for individual branches
ndustry. His indexes and subindexes were pub-
ed in the *American Economic Review*. (4) To
e the reader an idea of how Nutter "calculates,"
ll quote his calculations for ferrous metallurgy.
s is generally known, between 1913 and 1958
at changes took place in ferrous metallurgy in
countries, and especially in the USSR. There
eared many new grades of steel which were not
duced before (electric steel, special steels),
dreds of new grades of rolled metal, more labor
suming and expensive. As a result, the rate of
wth of output of ferrous metallurgy, calculated
alue terms, is far greater in all countries with-
exception than the rate of growth of steel and
ed metal, calculated in tons.
i the USSR steel production between 1913 and
5 went up 10.7 times, manufacture of rolled
al ten times (in tons). (5) And according to Nut-
the output of ferrous metallurgy in value terms
eased nine times in the same period. (6) Accord-
to Nutter the USSR is the only country in the
ld where the production of ferrous metallurgy,
ulated in tons, grew at a faster rate than in
e terms. That, indeed, is an economic absurdity.
'e could cite many more examples of this kind.
this will suffice to show that Nutter lacks ele-
ntary scientific scruples. His falsification of the
for the USSR became so obvious that two gov-
ment employees — Greenslade and Wallace —
e forced to criticize Nutter. They wrote: "A
parison of Nutter's 'All Industrial Products'
the FRB index since 1937 suffers the same de-
ency as his comparison of materials indexes
comprehensive US indexes. It includes for the
ed States and excludes for the Soviet Union
e important and rapidly growing industries." (7)
s, Nutter's "conclusions" are based on dis-
ed statistical data.

Speaking before the Joint Economic Committee of the Congress, the CIA Chief, Allen Dulles, also had to repudiate Nutter's estimates. He said that the actual annual rate of growth of industrial output in the USSR since 1950 averaged 10% and not 7.7% as alleged by Nutter. Dulles stated: "Furthermore, in reviewing the various studies of Western scholars, I have been struck by the substantial agreement on the rate of industrial growth achieved by the Soviet Union over the period since 1950. The range of estimates is from 9 to 10.5% a year."

Having understated the rate of increase of industrial output in the USSR, Nutter then compares the volume of Soviet industrial output to that of the USA. According to Nutter the volume of industrial output of the USSR was only 23% of the US level in 1955. (8) He asserted that consideration of the industrial development of the USSR and the USA between 1955 and 1958 would show that in 1958 the output of Soviet industry was less than 30% of the American level. Allen Dulles testified in Congress that in his opinion 40% would be correct. But neither Nutter nor Dulles spoke the whole truth. Actually, Soviet industrial output in 1958 was at least 55 to 57% of the USA level. This ratio was established on the basis of calculating the value of 150 major industrial commodities produced in the Soviet Union and in the USA at uniform prices and was confirmed by estimates of many bourgeois economists -- Hodgeman (USA), Nove (Britain), Wagenfuhr (FGR) and others. The following data on the production of the most important industrial goods in kind is extremely significant (see table on the top of the following page).

An analysis of such indices as the level of production of sectional rolled steel for industry, the existing number of machine tools, the ratios of expenditures on installation and equipment in capital investments, etc., also shows that the Soviet machine-building industry in any case produces machines to the value of more than one half of the United States' output of machinery. These calculations made by Soviet economists have been confirmed by the calculations of a number of Western economists as well.

That is how things stand with the pseudo-calculations of Nutter and Dulles, who seek to misrepresent and belittle the tempo of Soviet industrial development in the past. Let us now turn to the question of the possible rates of growth of Soviet and US industry in the years to come. In the first place, mention should be made of the fact that bourgeois economists always seek to avoid the question of the continuity of Soviet industrial development and its cyclical nature in the USA, as in all other capitalist countries, and this is no accident.

Industrial Output in the USSR and the USA in 1958

Type of Product	Unit of Measurement	USSR	USA	USSR in % of USA
Steel	million tons	54.9	77.3	71
Electric power (bus-bar yield)	billion kwh.	219	724	30
Coal, oil, gas, and other types of fuel	million conventional tons	630	1308	48
Metal-cutting lathes	thousands	138.6	149*	93
Tractors	thousands at 15 hp.	419	470	89
Grain harvester combines	thousands	65.3	46	142
Cement	million tons	33.3	52.3	64
Timber (without firewood)	million cubic meters	252	246	102
Cotton fabrics	billion square meters	4.6	8.3	56
Woolen fabrics	million meters	303	250	121
Leather footwear	million pairs	356	582	61
Sugar	million tons	5.4	2.4	227
Butter	thousand tons	778	685	114
Fish (haul)	million tons	2.9	2.7	107

* 1957

As we know, industrial production in the USSR has never been at a standstill, has never declined in years of peace. The same is true of all other socialist countries.

In the capitalist countries there has never been a period of any length when industrial production developed continuously; history cannot recall a single case of any capitalist country avoiding alternating periods of economic upsurge and years of decline or production stoppages resulting from crises and depression. Can American economists, for example, name a period of at least ten years in US industrial development when production grew steadily from year to year? There has been no such period. This fact can be ignored, but no one would dare refute it, not even Nutter. Continuity of development, as well as a high rate of growth of production, are explained not by the level of production but by the social nature of industry. Many bourgeois economists assert that the USSR is developing at the same rate as the USA did when its level of production was at a comparable level. However, the groundlessness of these allegations is easily proved by comparing the actual average annual rates of industrial growth of the USSR and the USA. These were as follows:

Periods	USSR	USA
1918-1958	10.1	2.9
1930-1940	16.5	1.2
1946-1953	18.5	5.8
1953-1959	11.2	1.8

The most favorable years for US economic development were the 50 to 60 years preceding the first world war. This was a period when million of skilled workers from European countries streamed into the USA; capital flowed in steadily from Britain, France, and other countries, whic along with the abolition of slavery, the colonizati of the western regions, the absence of feudal sur vivals and the like, created extremely favorable c ditions for the rapid industrialization of the coun try. And yet the annual rate of industrial growt this period amounted to 5%, rising in some year (1880-1885) to 8.7% a year.

Where, then, is the period in which the United States developed as did the USSR? There is no such period.

characteristic feature of Nutter's method of
srepresentation is the fact that he concludes
his estimates with 1955. However, judging by
erences, those who presented papers had Soviet
gazines and books right up to the first half of
59 available to them. Consequently, Nutter pos-
ssed data on industrial growth not only for the
A but also for the USSR for the period 1956 to
58. On the basis of these data Nutter should have
fessed that in these years the USSR grew many
es more rapidly than did the USA. Here are
se data on the rate of industrial growth in the
SR and the USA for the period 1955 to 1959 (1955
00):

Years	USSR	USA
1955	100	100
1956	111	102.6
1957	122	102.6
1958	134	96.6
1959	149	107.4

nstead, after quoting distorted data to the effect
t the average annual increase in industrial pro-
tion in the USSR between 1950 and 1955 was not
1% but 7.7% a year, Nutter goes on to say: "A
crepancy in favor of the Soviet Union has per-
ted through 1958, though the Soviet growth rate
tended to decline somewhat, as far as one can
from the defective published data. It is too
ly to say whether the decline is permanent or
y temporary; whether this reflects a persistent
ardation or a temporary fluctuation. It is also
early to say what is happening to the tempo of
erican industrial growth."

The reader is astonished. The fact is well known
t industrial output in the USSR in recent years
been as follows (in % of the preceding year):

1952	+ 12	1956	+ 11
1953	+ 12	1957	+ 10
1954	+ 13	1958	+ 10
1955	+ 12	1959	+ 11

ndustry in the USSR is growing from year to
r at a rate of 10 to 12% and this fact is quite
vincing.

n determining the possible rate of industrial
wth in the USA in the next ten years Soviet econ-
ists proceed from the fact that this rate will
hardly be higher than the annual average during 1952 to 1958, when it was about 2%.

Speaking in Congress, Allen Dulles said that the rate of industrial growth in the USA in the sixties would be 4.5%. But such an assumption is nothing but wishful thinking. The author of the paper "Soviet Economic Growth and United States Policy," Howard C. Peterson, wrote: "Our strategy in this competition should be to make our own system work as well as we can..." But the trouble is that it can only work poorly.

We do not exclude the possibility of the growth of capitalist production. Slowly and sluggishly, with reverse motions and slumps in production which bring incalculable calamities to the American working people, industry in the USA will nevertheless continue developing. But the time is not so very far distant when that country will have to yield first place in the world in the general volume of industrial production, and then in production per head of the population, to the Soviet Union.

Charles B. Shuman's paper "An Agricultural View of the Soviet Threat," in which the author took great pains to gather together all the slanders on the USSR printed in the American press in the last few years, is written in the "cold war" strain. Against this background the paper of Gale Johnson and Arcadius Cahan on "The Rate and Level of Agricultural Production in the USSR and the USA" will appear as an objective attempt to go to the heart of the natter, The authors cite estimates of the growth of agricultural production in the USSR which almost fully coincide with those of the Central Statistical Administration: an increase of about 70% compared with 1928. Going by the CSA data for 24 years (11 prewar and 13 postwar years, that is, from 1930 to 1940 and from 1946 to 1958) the average annual increase of agricultural production in the USSR was 4.7% and in the USA 1.5%. (9) The authors do not, unfortunately, cite figures for the ratio of Soviet agricultural output to that of the USA as a whole, citing only the data for individual farm products.

At the same time, taking into account the fact that the value of some 18 or 20 of the basic products amounts to over 90% of the total value of agricultural production, these data can easily be calculated. Soviet economists have calculated that in 1958 total agricultural output in the USSR was 75% of the American, and per capita output was approximately 60% of the American. The data of output in kind in 1958 confirms these computations (see table on the top of the following page).

The authors of the paper on Soviet agriculture do not deny the calculations published in the Soviet press which give the ratio of Soviet to USA

Type of Product	Unit of Measurement	USSR	USA	USSR in % of USA
All grain	million tons	141.2	186.8	75.6
Including wheat	million tons	76.6	39.8	192.4
Potatoes	million tons	86.5	12.0	720.9
Sugar beets	million tons	54.4	13.9	391.4
Meat	million tons	7.7	16.3	47.3
Milk	million tons	58.8	56.8	103.5
Wool	million tons	0.3	0.13	240.3
Eggs	billions	23.1	64.5	35.8

agricultural production in 1958 as 75:100. These figures are all the more difficult to deny because it is no great problem to recalculate the output of the basic agricultural products in uniform prices.

The Seven-Year Plan provides for a 70% increase in agricultural output as compared to 1958. Hence, taking into account the ratio of Soviet to American agricultural production and the rates of growth of agricultural production in the USSR and the USA, we can readily assume that by 1965 the Soviet Union will produce more farm products as a whole and per head of the population than the USA.

The above shows that the authors of the papers failed to shake the prospects of the Soviet Union winning the economic competition with the USA. On the contrary, their own materials, in fact, support the inevitability of this victory in the very near future.

Purposes of Developing Production Under Socialism and Capitalism

The authors of some of the papers allege that the aim of the Soviet economy was not to improve the living standards of the people but to enhance the country's industrial and military potential, to maintain which the government was laying special emphasis on increasing capital investments. Thus John P. Hardt wrote about the “willingness of the Soviet regime to defer consumption in favor of investment” and the willingness of the Soviet people to agree to a low level of consumption.

Allegations of this kind are ridiculous both from the economic and the political standpoint. The strength of the Soviet economy is precisely that it ensures the rapid development of all spheres and branches of production: not only of heavy industry but also of agriculture and light industry. In the USSR, agricultural output in the period from 1947-1949 to 1958 increased by 62.4%, whereas in the USA it went up only 23% and then only because 1958 in the USA was unusually favorable for agricultu
The increase in Soviet light industry between 195
and 1957 was 100% and in the food industry 92%, compared to 1.8% and 11.6% respectively in the USA for the same period. (10)

These data fully refute the allegation of bourge
economists that the objective of Soviet productio
not popular consumption but increased capital investments to the detriment of consumption. Production of consumer goods — the material foundation for improving living standards — is growing far more rapidly in the USSR than in the USA. A
at the same time the Soviet Union is ensuring a f
greater rate of growth of heavy industry, which i
turn is the essential condition for achieving a hig
rate of growth of consumer goods.

In Lynn Turgeon's paper the prospects for developing the light and food industries are connec
primarily with the possibilities of increasing the number of workers employed in these branches. The author concentrates his attention on certain difficulties in replenishing the manpower in the USSR until 1964.

However, this “anxiety” concerning the situati
in the light and food industries of the USSR is unfounded, since the most important factor in thei
development will not be the increase in the numb
of workers and employees, but the growth of lab
productivity. The Seven-Year Plan envisages extensive reconstruction of light and food industry enterprises; the existing equipment will be replaced by more efficient equipment, including aut
matic machines on a large scale. Thus, 24,600 automatic looms and many other machines will l
installed in the cotton mills. Automatic and sen
automatic lines will be installed in the footwear and garment industries. New, highly efficient c
tinuous-operation equipment, automation of proc
tion processes and mechanization of laborious p
esses will be introduced on a large scale in all branches of the food industry.

Favorable conditions for the technical reconstruc-
n of the light and food industries now exist, thanks
he great progress made in the development of
Soviet machine-building industry and the expan-
n of reciprocal deliveries of goods between the
ialist countries. All this makes it possible to
rease labor productivity in the light and food in-
stries at a rapid pace.

At the present time there are no substantial dif-
ulties in the USSR in replenishing the manpower
enterprises in the light and food industries, be-
use the majority of these are situated in densely
pulated areas of the European part of the USSR;
se areas possess the necessary labor reserves.
should be noted here that only 7% of the total in-
ease in the number of workers and employees in
Soviet economy during the seven-year period is
counted for by the share of the light and food in-
stry.

In the Soviet Union living standards are steadily
proving. If we were to take the most indicative
ex of living standards — the national income —
would see that in the USSR it went up 126% be-
een 1950 and 1958 whereas in the USA it in-
eased 25.4%.

The real incomes of the Soviet population are
steadily growing. In 1958 the index of the growth of real incomes of workers and employees was 155% compared with 1950 and the index of real incomes of the peasants was 185%. By 1965 real incomes of workers and employees will go up 40%. The growing state payments and benefits extended to the population are also very important. Allocations for social insurance, benefits, pensions, student stipends, free education, maintenance of kindergartens, creches, sanatoria, rest homes, homes for the aged and for other payments and grants amounted to 42 billion rubles in 1940, 122 billion rubles in 1950 and 215 billion rubles in 1958. The Seven-Year Plan provides for state payments and benefits to the amount of 360 billion rubles in 1965.

Retail price cuts are another important factor in increasing the real incomes of the Soviet people. Increased production of consumer goods and increased real incomes of the population lead to a steady growth of consumption.

In the USSR consumption is changing in both quantity and quality. The appropriate data, based on budget studies of the CSA, show the per capita consumption of the basic food products in workers' and collective farmers' families to be as follows (1958 in % of 1940). (11)

Food Products	Workers' Families	Collective Farmers' Families
Bread and bread products	76	98
Vegetables and melons	135	127
Meat and fat	213	187
Milk and dairy products	250	164
Fish and fish products	180	296
Eggs	222	262
Sugar	215	575
Confectionery	161	304

The dynamics of the working people's living
ndards in the USA differ very appreciably from
se in the Soviet Union. Even according to the of-
ial data of the US Department of Agriculture, the
ex of per capita food consumption in 1956 was be-
that of 1946 and exceeded the 1928 level by only
%. The Soviet Union exceeded the US level of
duction of butter per head of the population in
9 and also outstripped the USA in gross milk pro-
tion. In 1965, after fulfilling the Seven-Year
n, the production of milk and dairy products in
USSR will rise to 440 to 470 kgs. per head of
population compared to 330 kgs. in the USA (1958),
butter respectively 5.7 kgs. compared to 3.9
kgs. Production and consumption of fish, vegetables and fruits in the USSR will grow considerably.

The Soviet Union has already surpassed the United States in the rate of growth and absolute increase in the manufacture of clothing and footwear. In 1965 output of footwear in the Soviet Union will rise to 515 million pairs compared to 352 million pairs in 1958. In the USA production of footwear is now at 580 to 590 million pairs. In 1958 the total production of fabrics in the USSR amounted to 8 billion meters (some 35 meters per head of the population). In 1965 it is to increase to 10.6 billion meters and will amost equal the present American level, which is roughly 11 billion meters. The Soviet people are already better provided with woollen fabrics than the Americans. By 1965 the output of woollen fabrics will increase 70% and total 500 million meters, which is almost double the present American level.

Does not this adequately prove that the objective of socialist production — to raise living standards and satisfy the growing wants of the people — is being successfully achieved?

And what can be said about the objectives of the development of capitalist production? The aforementioned J. Berliner writes: “The driving force of our economic system is the pursuit of private gain.” However, under capitalism this gain is available only to those who own the means of production. This gain goes by the name of profit. Profit is the driving force in the development of capitalist production, something which Berliner and the other authors of the papers keep to themselves.

The collection deals at length with economic life in the United States but makes no mention of the fact that compared with prewar data the profits of American corporations have increased more than 6 times (in current prices) while industrial output has increased somewhat more than 100%. Whereas the profits of the capitalists are steadily rising, the share of the American worker in the value of the product he creates is constantly declining. According to the Labor Research Association the “relative position of the working class” (the relation of the real wages of the worker to the value of the product of his labor) declined by 11% between 1946 and 1956.

According to official data of the US Treasury Department there were 223 persons in the country in 1957 with an annual income exceeding 1 million dollars. At the other end of the social ladder there were 30 million families and individuals with an annual average income of only 2,040 dollars. This is little more than one-third of the so-called subsistence minimum worked out by the Heller Committee.

Seeking to belittle the advantages of the socialist economy, the authors make use of extremely tendentious methods of comparison. Digressing from the economic structure of society (or, as they say, from the conditions of centralized planning), they seek to prove that the organization of production is better in the United States than in the USSR, and that the management of industrial enterprises in the USSR, although quite good, still suffers from a number of defects. It is on these defects that the authors focus their attention, seeking to explain their existence by the very nature of the Soviet economy. For instance, the reports devote a great deal of attention to shortcomings in supply, to the attempts of certain enterprises to lower their pr duction potentialities artificially, to instances of non-fulfillment of plans of coordinated deliveries and even to cases of official breaches of trust. There is no point in dealing in greater detail with these “scientific” findings. Such shortcomings d not determine the essence of the Soviet system o industrial management. On the contrary, the bro opportunities for uncovering and abolishing these shortcomings arise out of the very nature of the socialist system. The Soviet Government, the Pa and all working people uncover and abolish these shortcomings.

We should consider one other question connect with the efficiency of management. In his paper, D. Granick correctly notes that the managerial machinery in the USSR is smaller than in the US and that its proportion in the total number of employed persons has decreased as compared to 19 But this only confirms once again that the Soviet system of industrial management is more econo ical than the capitalist.

The papers devote considerable space to questions of national economic planning in the USSR, particular, the planning of material and technical supply. In a paper devoted to questions of mater al and technical supply methods in the USSR, H. Levine seeks to prove that the method of determining the balance of economic relationships at t national economic level was allegedly invented in the USA by W. Leontief, and that now Soviet econ mists want to utilize it in planning their national economy. All this is incorrect from beginning to end. The whole world knows that the balance me od of planning (balance of the national economy, material balances, labor balance, etc.), as well a national economic planning in general, were first introduced in the USSR and can be applied only u der the conditions of public ownership of the mea of production. It is known that the material balances drawn up in the USSR are sufficiently accu ate and reliable. This has been confirmed by the many years of experience in national economic planning. In the United States, on the other hand where private ownership of the means of product prevails, the balance method cannot be applied, cause the possibility of planning the national eco omy is excluded under capitalism. It is not acci ental that the “input-output” method proposed by W. Leontief has not found any real application in the USA. Attempts to adapt this method to the co ditions of a spontaneously operating capitalist economy cannot be successful.

In the USSR mathematical methods and normative data are being worked out to determine the

ance of inter-industry relationships for the whole
ional economy. The determination of such a bal-
e, with due regard for the many years of experi-
e in working out systems of material balances
our country, will promote the further improve-
nt of planning methods and will play an important
e in selecting the best versions of the plan while
s being drawn up. At the same time, it should be
phasized that no balance, including the balance
nter-industry relationships drawn up with the
p of electronic computing machines, can in any
replace the determination of the economic and
itical targets of the plan, of the main trends of
nomic development. The drawing up of any bal-
e can only be a subsidiary method. Therefore,
Levine is profoundly mistaken when he asserts
t utilization of the method of inter-industry rela-
nships will mean “a narrowing of the scope of
itically determined basic plan goals ...” More
ensive application of mathematical methods in
ermining material balances is a way of accele-
ing the elaboration of the plan and of improving
coordination of its targets. But we must disap-
nt H. Levine and the other authors of the papers.
iet economists and planning organs do not in-
d to follow “Leontief’s method.” They have their
, truly scientific method of working out balances
ed on the Marxist-Leninist theory of reproduc-
and the tremendous experience of national eco-
nic planning accumulated in the USSR. Similarly,
no one hope that the perfection of the methods
techniques of elaborating plans will lead to a
kening of the political and ideological basis of
nning. Our plans have always been and will be a
ans for the practical implementation of the policy
he Communist Party, of the planned building of
nmunism in our country.

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Iotwithstanding the many inventions and delib-
te distortions concerning the Soviet economy and
prospects for its development, the papers as a
le reflect the present change in US public opin-
. J. Berliner, author of one of the papers, writes:
vo generations ago people debated the question
whether a Socialist economy could possibly work.
tory removed that question from the agenda.
last generation changed the question to whether
Soviet economy could work at all efficiently.
t question has also been answered. These hear-
s would not otherwise be taking place. My discussion takes for granted that the Soviet economy is reasonably efficient.”

A significant admission!

American bourgeois economists seem to be learning the lessons of present-day reality.

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(2) *Narodnoe khoziaistvo SSSR v 1958 godu*, Gosstatizdat, 1959, p. 13; *Ekonomicheskoe sorevanie mezhdu SSSR i S Sha A*, Gosplanizdat, 1959, p. 61.

(3) Nutter compares the Soviet data on the dynamics of the number of workers engaged in industry with an index of industrial production, which he himself invented, and unexpectedly for himself, most likely, as no one before him had dared to draw such “conclusions,” informs the surprised reader that in the USSR labor productivity is growing at a slower rate than in the USA. And, once this is so, then the gap between tsarist Russia and the USA in the field of labor productivity was smaller than it is now! Such a distortion of facts is quite unprecedented.

(4) *American Economic Review*, May 1958, pp. 398-412.

(5) *Narodnoe khoziaistvo SSSR v 1958 godu*, p. 145.

(6) *American Economic Review*, May 1958, p. 404.

(7) *American Economic Review*, Sptember 1959, pp. 694-695.

(8) It is interesting to note that the report of the Joint Economic Committee for 1957 indicates that USSR industrial production in 1955 was 33 to 34% of the US level.

(9) *Narodnoe khoziaistvo SSSR v 1958 godu*, Gosstatizdat, 1959, p. 119.

(10) *Narodnoe khoziaistvo SSSR v 1958 godu*, p. 140. The data for the USA have been calculated by the Economic Research Institute of the USSR State Planning Committee on the basis of the branch structure of Soviet statistics and therefore the data for the USSR and the USA are fully comparable.

(11) *Narodnoe khoziaistvo SSSR v 1958*, p. 76.

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V. STAROVSKII:

On the Methodology of Comparing Economic Indices of the USSR and the USA

In conditions of peaceful economic competition between the Soviet Union and the United States the proper scientific comparison of our indices with the indices of American statistics is of great importance.

Comparisons between the economic indices of the USSR and the USA are contained in recent highly important political documents of the Communist Party and the Soviet Government, particularly in the decisions of the 20th and 21st CPSU Congresses, plenary meetings of the CPSU Central Committee, the Seven-Year Plan target figures, and reports and statements by N. S. Khrushchev, First Secretary of the CPSU Central Committee and Chairman of the USSR Council of Ministers. These estimates, based on irrefutable facts, characterize the most important indices of our economy as compared with the economy of the United States.

For many years Soviet statisticians and economists have conducted important research on working out a system of indices to be used in comparing the Soviet and capitalist economies and in solving numerous and often highly complicated methodological problems arising in the process of comparison. This research has been especially fruitful in recent years, for it has been based on the highly important theoretical work of our Party on the question of economic competition between the two systems.

The USSR Central Statistical Administration is making comparisons of the major indices of the economy and culture of the Soviet Union with those of the capitalist countries. Its respective divisions are working out correct methods of comparison and are preparing comparable statistics for publication. Much work in this area has been done by the Institute of Economics of the USSR Academy of Sciences, the Institute of World Economics and International Relations of the USSR Academy of Sciences, and t Economic Research Institute of the USSR State Pla ning Committee. Important work in comparing th economic indices of the USSR and the capitalist countries is also being conducted in the Business Studies Institute of the Ministry of Foreign Trade the Labor Institute of the State Committee of the USSR Council of Ministers on Labor and Wages, t Moscow Institute of Economics and Statistics, the Chair of Statistics of the Economics Department Moscow State University and the Moscow Financia and Economic Institute. Many Soviet economists have worked on the same subjects. Mention shou be made of the studies of Academician S. G. Stru lin and a number of other scientists.

Much attention is also being given to the problems of comparing economic indices in the capita ist countries, particularly by American research organizations and some American economists. W must note with regret, however, that until recent the overwhelming majority of these economists (cept for some progressive scholars) were engage in the wholesale discrediting and groundless unde estimation of the indices of Soviet economic grow Only recently has there emerged a tendency to ad mit the achievements of the Soviet economy and give a somewhat more sober appraisal of them.

Our press has more than once rightly noted the obvious tendentiousness of American economists in assessing the indices of the Soviet Union's economic growth. Even some American scholars ha begun to admit this lately. Thus, a US congressi al committee recently published, among other reports, a paper by Lynn Turgeon about the standa of living in the Soviet Union. He was compelled admit that Western economists “not only tend to give an inflated picture of the height of Russian prices but also, to some extent, magnify the size the gap between the levels of living in the United States and the USSR.” Lynn Turgeon regards a simple comparison of the wage and price levels the two countries as incorrect and says that “the procedures, which have ordinarily been employed extensively in the past, will probably to an

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* A report on this subject was delivered by the author at the annual meeting of the section of Economic, Philosophical and Legal Sciences of the USSR Academy of Sciences on February 22, 1960.

easing degree tend to exaggerate the relative ght of Russian prices as well as the gap between two levels of living to an even greater extent in future ...”

s regards a number of indices, there is a differ- e in the method of calculation employed by So- and American statistics. Thus, a correct com- ison of the respective indices requires that they made comparable. For example, in the USA the duction of electric power is figured on the basis ff-busbar output (that is, without the auxiliary er used by power stations for their own needs), le Soviet statistics give gross production of tric power. To make these indices comparable Central Statistical Administration calculates er the generation of electricity in the USSR ac- ding to off-busbar output or the gross production lectricity in the United States. Raw cotton is d to compute cotton output in the USSR, whereas United States and all other capitalist countries cotton fiber, the weight of which constitutes roximately a third of that of raw cotton. There- e, in comparing the indices of the production and d of cotton in the USSR and the United States, s necessary to convert US data into raw cotton ., to treble the figures pertaining to fiber), or vert Soviet data into cotton fiber (i.e., take one d of the figures pertaining to raw cotton). Meat duction statistics in the USSR include heads, feet fat, whereas American statisticians sometimes lude heads, feet and fat and often exclude poultry t in the estimates of meat production. There- , in comparing data on meat output in the USSR the United States the Central Statistical Admin- ation of the USSR estimates meat output in the ed States taking into account heads, feet, fat and try meat (according to US data, of course).

fficial American statistics list among students igher educational establishments people who at- junior colleges, as well as first- and second- students of other colleges which, in the level nstruction, are equivalent to the senior grades econdary school. Many American and British cators admit that this group is incorrectly listed ng students of higher educational establish- ts. In 1958, Americans held that there were 6,000 college students in the United States. If incorrectly listed students are excluded, the ber of college students in the United States in was 1,738,000. According to official calculations United States has more students than the Soviet n, but according to correct calculations it has less.

these and all other similar cases, Soviet statis- ns strictly observe the principle of compara- y of data and make the necessary recalculations nsure their comparability. (1) But in addition to actual differences in calculations in the USSR and the United States (all of which can be overcome), there are many instances when there are no real differences but they are merely invented by dishonest critics. For example, the rather well-known Harry Schwartz, in an article published in The New York Times on January 16, 1959, cast doubt on Soviet milk production statistics on the pretext that these data include both milk consumed by the population and milk fed to calves. The impression created in the reader's mind by Schwartz was that American statistics calculate milk production in a different way. Yet, it is a fact that American statistics and American statistical manuals, (2) just as Soviet statistics, include in milk production both the milk consumed by farmers and the milk used for feeding calves. It is only the milk sucked by the calves that is not counted by American statistics, just as is the case with Soviet statistics. Harry Schwartz evidently needed this invented difference to gloss over the unpleasant fact that the Soviet Union has already outstripped the United States and has advanced to first place in the world in the total production of milk and the total and per capita production of butter.

There are essential differences between American and Soviet statistics in the system of calculating industrial production indices. In calculating these indices, Soviet statisticians draw on a complete accounting of the physical volume of production of all goods without exception evaluated in comparable prices. American statisticians do not have at their disposal a sufficient quantity of direct and reliable data and use less perfect methods in calculating these indices. For most branches of industry, instead of using the physical output of goods indirect indices are taken: number of man-hours worked (usually adjusted for changes in labor productivity), consumption or delivery of raw materials, consumption of electric power, indices of the value of output in current prices adjusted by the price index, etc. As weights for some branches of industry American statisticians use the so-called net product (to be more exact, the assumed net product, because depreciation is not excluded).

American statisticians criticize Soviet indices because they are based on an accounting of gross output. Without going into the details of why we are interested in calculating gross production (the most important reason is the need for dovetailing the output of enterprises and the output of industries), we shall merely mention that quantitatively the difference between average indices constructed on the basis of gross and net production is negligible; it is particularly negligible in comparisons covering a small number of years.

The differences are more serious in comparing such indices as the national income and the standard of living. Here it is a matter of different economic definition of the content of these indices.

Comrade N. S. Khrushchev, in his conversation in 1958 with E. Ridder, owner and publisher of the American *Journal of Commerce* and H. Luedicke, the editor of this newspaper, pointed out that "the economic concepts which underlie Soviet statistics, for example, clearly distinguish between the sphere of material production and that of non-productive branches, and correspondingly between the concepts 'production' and 'services.' In the USSR the volume of the aggregate social product does not include the value of 'services' in non-productive branches of the national economy, whereas in US statistics the 'gross national product' embraces all services irrespective of whether they are connected with production or not. Similarly, in defining the size and structure of the national income, Soviet statistics treat the national income not as a mere sum of all kinds of incomes, as is the practice in bourgeois statistics, but as the sum of primary incomes received in the sphere of material production."

American statistics, which include in the produ tion of the national income not only the results o material production, but also services, artificial exaggerate the total size of the national income. American statistics also make serious mistakes determining the indices of distribution of the national income, particularly the share of the work ing people.

Comparison of the Volume of Industrial Producti

The first, and perhaps most important, method logical question in comparing economic indices i that of comparing the volume of industrial output

A comparison of the levels of industrial produ tion can be made by comparing both the data on t physical volume of production and also the value the output in comparable prices. The most indisputable method is that of comparing the actual ph ical output of major industrial items, since this above all determines the industrial potential of o or another country. Comparisons for 1958 have ready been given in the Soviet press. Here are t corresponding data for 1959:

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	USSR	USA	USSR in % of USA
Pig iron (million tons)	43	55	78
Steel (million tons)	60	85	71
Iron ore (million tons — US figure for 1958)	94	69	137
Coal, oil, gas and other fuels (million tons, in terms of conventional fuel)	657	1,351	49
Electric power (busbar yield, billion kwh.)	248	795	31
Timber without firewood (millions of solid cubic meters — US figure for 1957)	261	246	106
Cement (million tons)	38.8	56.8	68
Mineral fertilizers (million tons — US figure for 1958)	12.9	28.2	46
Cotton fabrics (billion square meters, unbleached fabrics)	5.0	8.7	57
Woollen fabrics (million running meters)	328	280	117
Leather footwear (million pairs)	389	640	61
Meat (raw material resources, including household slaughter — million tons)	8.6	17.3	50
Milk (raw material resources — million tons)	62.0	56.6	110
Butter (thousand tons)	845	658	128
Sugar (million tons)	6.0	2.5	239

It should be noted, however, that although the United States produces, for example, nearly three times as much electric power as the Soviet Union, industrial consumption of electricity in the USSR in 1959 was only slightly less than half of that in t United States.

Comparison of the output of the machine-buildi industry is most complex. In addition to compari e value of output, it is also of interest to compare e number of machine tools in use. In the USSR out two million machine tools are now in use, proximately 90% of the respective figure in the ited States.

To characterize the relationship between the lev- s of total industrial output in the USSR and the ited States it would be necessary first of all to mpare the volume of gross industrial production. t in the United States it is now customary to pub- h an index not of gross industrial production, but so-called net production, that is, the value of out- t less expenses for raw material, supplies and el. In other words, the assumed net production cludes wages, profits and depreciation.

Several variants of calculations were made in der to compare the output of industry in the United ates and the USSR in 1959. First, the magnitude the assumed net production of Soviet industry was lculated and compared with the assumed net pro- ction of American industry. Second, the gross oduction of American industry was calculated and mpared with the gross production of Soviet indus- y. Then, two variants of indices for converting bles into dollars and dollars into rubles were rived. The conversion into dollars of the output Soviet industry was done with due consideration the industrial structure of the USSR, while the nversion into rubles was made by taking into ac- unt the industrial structure of the United States. a result four variants were obtained. If we mpare the assumed net production in rubles, we d that in 1959 Soviet output was 61% of the US tput. If we compare it in dollars we find that it somewhat smaller than 60%. As for gross pro- ction, in both variants the gross production of the SR was equivalent to 60% of that of the United ates.

Our official documents usually point out that in 58 the industrial output of the USSR was not less an half of that in the United States. This is an ab- lutely indisputable appraisal both for 1958 and 59. The above calculations show that in 1959 the lume of Soviet industrial production was about % of the output of American industry. The com- rison of the physical volume of output given ear- r also confirms that industrial production in the SR is more than half of that in the United States.

Until quite recently the American press denied t industrial production in the Soviet Union was eady not less than half of the US output. Some erican economists asserted that Soviet indus- al production was about one-quarter or one-third the American. For example, in June 1959 lliam Byner, Vice-President of the Chase Man- tan Bank, stated that the latest statistics showed that the volume of production in the Soviet Union was probably not more than 20 to 25% of the American level.

Last November comparisons of the Soviet and American economies were made at meetings of the Subcommittee on Economic Statistics of the Joint Economic Committee of Congress. A number of American economists tried to repeat the absurd allegations that Soviet industrial output was only one-quarter or one-third of the American level. Allen Dulles, head of the US Central Intelligence Agency, who spoke at a meeting of the committee, had to dissociate himself from these overzealous attempts to discredit Soviet economic achievements. He stated that industrial production in the Soviet Union was not one-quarter and not one-third, but about 40% of the American level. Dulles said that "we should frankly face up to the very sobering implications of the Soviet economic program and the striking progress they have made over the last decade." This forced admission of Dulles speaks of a more sober approach to the appraisal of our successes, although even Dulles does his utmost to minimize our achievements.

A detailed reply to Allen Dulles was given in the editorial published in *Vestnik Statistiki* (No. 11, 1959) and in *Pravda* of November 28, 1959.

Progressive American economists also refuted Dulles. The well known American economist Victor Perlo, having studied available data, holds that the statement of Allen Dulles that in 1958 Soviet industrial output did not exceed 40% of the American level was absolutely groundless. In Perlo's opinion the calculations of Soviet economists which show that Soviet industrial output equalled 55% of the American level were much closer to the actual state of affairs. In a special study of the Soviet and American economies, Perlo arrives at the conclusion that in 1967 the USSR will overtake the United States in total industrial output, while in 1970 it will surpass it in per capita production.

The American Economic and Industrial Development Corporation has arrived at similar conclusions. A report of this corporation, published by the Senate Foreign Relations Committee, notes that if the present trend continues, by 1970 the gross national product of the USSR will rise by 130% as compared with an increase of less than 70% in the United States. By 1970, the report continues, the USSR will probably have a huge industry, relatively much stronger than at present and in some respects larger than the industry of the United States.

We would like to discuss in greater detail the question of the relationship between the level of industrial production in the United States and in prerevolutionary Russia, raised by Allen Dulles. He said that in the USSR an official "myth" had allegedly been created about the exceptional backwardness of pre-revolutionary Russia and that the "Soviet party line" aimed to prove that industrial production in pre-revolutionary Russia was less than 7% of American industrial output in 1913. Dulles even tried to contrast this "Soviet party line" with the statements of Academician S. Strumilin, according to whose calculations Russia's industrial production in 1913 was not 7% but 11 to 12% of American industrial output. (3) Dulles subscribed to the appraisal of Academician Strumilin, characterizing it as an objective one.

The editorial in *Vestnik Statistiki* already noted the amazing circumstance that Mr. Dulles did not know the speech made by the Chairman of the USSR Council of Ministers, N. S. Khrushchev, at the opening of the USA National Exhibition in Moscow and published in the press on July 25, 1959. In that speech Comrade N. S. Khrushchev said: "It is known that total industrial output in pre-revolutionary Russia was one-eighth of that in the United States and per capita production was one-thirteenth or one-fourteenth." By the way, more than two years ago, on September 15, 1957, it was also pointed out in the official Theses of the Propaganda and Agitation Department of the Central Committee of the CPSU and the Institute of Marxism-Leninism under the CPSU Central Committee (published for the 40th anniversary of the Great October Socialist Revolution) that "in 1913 per capita production in our country was one-thirteenth or one-fourteenth of that in the United States." Dulles looked in vain for discrepancies between the appraisals of Comrade N. S. Khrushchev and Academician S. G. Strumilin: 11 to 12% of the industrial output of the United States is the same thing as the one-eighth of which Comrade N. S. Khrushchev spoke.

It should be noted, however, that some of our economists have estimated that the gap between pre-revolutionary Russia and the United States was even wider. Thus, Ia. Ioffe in his book, *Strany sotsializma i kapitalizma v tsifrakh*, estimated that US industrial production was 14 to 15 times greater than that of pre-revolutionary Russia, and production per capita was 21.4 times greater. These figures were also cited by Comrade Baibakov in the journal *Kommunist* (No. 6, 1956). The estimates of Comrades Ioffe and Baibakov are wrong; they run counter to data on the production of major industrial items in 1913 in Russia and in the United States. We consider as correct the critical remarks about Ioffe's estimates given by Academician Strumilin in his book, *Na putiakh postroeniia kommunizma*.

It is necessary, however, to introduce some clarification on a point usually overlooked in making such comparisons. When we speak of total industrial production in pre-revolutionary Russia we should bear in mind that comparisons can be mad for three different territories. Thus, the entire territory of the Russian empire (without Khiva an Bokhara, but including Poland and Finland) was inhabited in 1913 by 165.7 million people; it had a total industrial output valued at 20 billion rubles, constant 1926/1927 prices. It was this entire territory of the Russian empire that had an industria output equal to one-eighth of the American level. The present territory of Russia (without Poland an Finland, but including the regions of Western Ukraine and Belorussia and the Baltic republics) was inhabited in 1913 by 159 million people; its industrial output amounted to 18 billion rubles, not 20 billion rubles. Finally, the territory of the USSR within the borders of September 1939, usual taken for dynamic comparisons, was inhabited in 1913 by 139 million people; its industrial output amounted to 16.2 billion rubles. For this territor industrial production in the United States was 10 times, and not 8 times, greater than in pre-revolutionary Russia.

As regards rates of industrial growth, in 1959 total industrial production in the USSR was more than 40 times greater than in 1913 on the territor within the borders of September 1939 (4); industri production rose 37 times for the present-day territory of the USSR and 33 times for the territory the entire Russian empire. In the United States i dustrial output between 1913 and 1959 rose 5.05 times, according to the new, increased index.

The fact that the rates of industrial growth in t USSR are several times higher than in the United States is a great advantage for our economy. Th the average annual rates of growth of industrial production between 1918 and 1959 were 10.1% in the USSR and 3.3% in the United States; in the las 15 years (1945-1959) these rates were 10.7% and 1.7% respectively. In the last six years (taking i to account some increase in output in the United States in 1959) the average annual rate of growth industrial production was 11.3% in the Soviet Uni and 2.4% in the United States. Moreover, in the case of a number of major industrial items, the USSR is surpassing the United States not only in the rates of growth but also in the absolute increase of production. Comrade N. S. Khrushche spoke about this in his report at the Plenary Session of the Central Committee of the CPSU in May 1958, citing data for the period between 1953 and 1957. The situation remained the same in the las two years, 1958 and 1959. Here are the respecti figures for the average annual rates of growth a absolute increases in the production of major industrial items in the USSR and the United States 1954-1959 (see table on top of the following page)

	Average annual rates of growth (in %)		Average annual absolute increases	
	USSR	USA*	USSR	USA*
Pig iron	7.8	-3.6	2.6 million tons	-2.3 million tons
Steel	7.8	-2.9	3.6 million tons	-2.7 million tons
Iron ore (USA figures are for 1954-1958)	7.9	-10.0	5.8 million tons	-10.2 million tons
Coal (including lignite calculated in terms of coal)	8.0	-2.2	26.9 million tons	-9.4 million tons
Oil	16.1	1.5	12.8 million tons	4.8 million tons
Gas	29.2	5.0	4.9 billion cu. m.	13.5 billion cu. m.
Electric power (without consumption of electric stations for their own needs)	11.9	7.5	20.2 billion kwh.	46.7 billion kwh.
Cement	15.9	3.9	3.8 million tons	2.0 million tons
Cotton (unbleached fabrics)	3.3	-1.3	148 million sq. m.	-117 million sq. m.
Woolen fabrics	7.8	-1.7	19.8 million running m.	-5.1 million running m.
Leather footwear	8.5	3.1	25.2 million pairs	18.0 million pairs

* Minus sign means a decline in production in the United States

As a result of fulfilling the Seven-Year Plan, for me major industrial items the Soviet Union will ceed, and for others draw close to, the present vel of output in the United States. Within five ars after the seven-year period, and perhaps even oner, the USSR will advance to first place in the rld both in total industrial output and in per cap- production.

Many American economists, admitting with a avy heart that Soviet statistics correctly calculate rates of industrial growth in the USSR in recent ars, vehemently challenge the indices of growth of ustrial output as compared with 1913, pointing to eged discrepancies between the rates of growth total output and of separate industrial items. ademician K. V. Ostrovitianov engaged in a very ccessful polemic on this point in the London nes (see also, editorial remarks in Kommu- t, No. 16, 1957 and No. 2, 1958). Let us recall in ef Ostrovitianov's line of reasoning, citing ures for more recent years. Thus, between 1913 1959 industrial production on the territory of USSR, within the boundaries which existed up to tember 17, 1939, rose more than 40 times. Dur- this period the production of steel increased 14 es, oil 14 times, coal 17 times, electric power times, the production of the machine-building metal-working industries more than 270 times cluding machine tools 98 times and turbines nearly 1,300 times), the output of chemical products rose 140 times, cement 26 times, household goods and articles that meet cultural requirements approximately 50 times, the production of the clothing industry 38 times, cotton fabrics 2.4 times, woolen fabrics 3.2 times, silk fabrics nearly 19 times, and tinned goods 45 times. On the whole, the output of consumer goods rose 15 times. These figures graphically show that there is no discrepancy whatsoever between the increase in total output and the increase in the production of separate items.

Doubts have been voiced in contemporary bourgeois literature concerning the system of comparable prices used in the Soviet Union.

What is the essence of this system? In Soviet statistics industrial production indices for the period between 1913 and 1950 were first calculated on the basis of pre-war 1912 prices, then in constant prices of 1926/1927 and later in prices of 1952. At present the rate of growth of industrial production is determined by evaluating production in prices of July 1, 1955. It should be noted that the indices of production growth in the USSR have always been calculated, and are calculated now, not on the basis of a selected sample of goods, but through the evaluation of the entire output of the country in comparable prices directly at industrial enterprises.

Many foreign economists allege that new industrial items not produced in 1926/1927 were evaluated in the industrial production index at the high costs prevailing in the year in which their production was started. This is absolutely untrue.

When the constant 1926/1927 prices first came into use and the number of new items was relatively small, official instructions laid down the procedure for evaluating the new items in constant 1926/1927 prices. Only in certain cases was it permissible to use the prices formed at the time the mass production of the new items was to be launched, but not the prices of the period when their production was first started, and this was done only because in those years the level of prices did not differ essentially from the 1926/1927 prices. This procedure of evaluating new items was outlined, for example, in the instructions of the Supreme Economic Council in 1931 on drawing up annual reports by enterprises and industrial organizations. These instructions were issued in Moscow in 1931. Subsequently, even these exceptions were prohibited. In 1936 a procedure was introduced under which the constant 1926/1927 prices for new items were approved in a centralized manner on the basis of a number of economic calculations. Thus, in some branches of industry the prices of new items were determined on the basis of 1926/1927 prices for similar goods produced earlier; in other branches calculations were made on the basis of prices of raw and other materials and the level of wages in 1926/1927. Even if items of a similar type were technically improved, they were calculated at the same prices as in previous years, that is, their evaluation in any case was not exaggerated. Official instructions directly prohibited the inclusion in gross industrial production of the value of new items in existing prices. Official instructions of the Central Statistical Administration stressed, and this point was strictly observed, that in cases where there were no officially ratified constant prices, the new items were to be recalculated in constant prices on the basis of the production costs and constant prices of the rest of the output of the given enterprise.

It goes without saying that the possible inaccuracies of former years, when such exceptions were allowed, did not affect subsequent indices. After all, total industrial production in 1948, let us say, was directly compared (in calculating the respective industrial production index) with the volume of production in 1928, for example, and it was of no consequence how the output in 1930, let us say, was calculated.

We must examine one more question. Some economists draw attention to the alleged discrepancies between the changing ratio of USSR industrial output to that of the United States between 1913 a the present on the one hand, and the industrial pr duction indices on the other. Let us examine thi problem.

In 1913 the industrial production of tsarist Rus sia amounted to one-eighth of that of the United States. Soviet industrial output in 1959 rose 33 times as compared with the total industrial prod tion of the Russian empire in 1913. During this riod industrial production in the United States in creased 5.05 times. Whereas in 1913 the ratio o industrial output in Russia to that of the United States was 1 to 8, now it is 0.6 to 1 for gross industrial output. Yet if we multiply 1 by 33 and 8 by 5.05 we get a ratio of 33 to 40.4 or 0.8 to 1.

What is the reason for this arithmetical discrepancy? Academician S. G. Strumilin rightly points out that this can be explained both by the ference in the methodology (in the United States index is based on the assumed net production an in the USSR on gross production) and by differenc in the structure of production by branches. (5) is difficult to take into account the exact quantita tive influence of each factor, but evidently the no comparability of the structure of production is o greater significance.

In studying the question of the ratio between di ferent volumes of production, one must bear in mind that such a ratio calculated on the basis of direct comparisons in current prices will differ from one based on the rate of growth of the phys cal volume of production in comparable prices. Our calculations show that even within a given economy and a single procedure for establishing prices, the ratios between the volumes of produc tion calculated by the different methods indicate above will diverge significantly. Even within a brief period these divergences will be considera ble. The ratios calculated by different methods for the industries of individual Union Republics result in divergences of 10 to 15%.

A Comparison of Labor Productivity in Industr

To compare the levels of labor productivity i Soviet and American industry it is necessary to determine not only the relationship between the volumes of output, of which we have just spoken but also the relationship between the number of workers.

According to American statistics, in 1959 the United States had 13 million industrial workers. For a comparison of this figure with that of the USSR it is necessary to take a comparable rang of branches of industry, excluding branches whi are not included in the industrial category in th ted States. In that case the number of industrial kers, including those in cooperative industry, . be 18 million in the USSR. Another adjustment uld be made for the difference in the methods of npiling the lists of employed personnel. Ameri- statistics practically exclude workers who are ent on account of sickness or other reasons. If, the sake of comparison with American data, we lude from the Soviet category of employed work- those who are absent on account of sickness or other reasons, we find that in the USSR the num- of workers engaged in industry, calculated on an rage annual basis, was less than 17 million.

s, the number of industrial workers in the USSR about 130% of the American figure. Proceed- from these data (industrial output in the Soviet on was more than half of that in the United es and the number of workers was 30% greater), find that labor productivity of Soviet industrial kers in 1959 was 40 to 50% of labor productivity merican industry. This means that in 1959 la- productivity in American industry was approxi- ely 2 to 2.5 times as high as in the Soviet Union. n 1913 labor productivity in Russian industry approximately one-ninth of that in American in- try. Other estimates, too, have been presented ur literature. It was pointed out, for example, the output per worker in pre-revolutionary Rus- amounted to approximately one-fourth of that in United States. This figure is correct for a com- ison of labor productivity in the manufacturing istry, i.e., large-scale industry in Russia. If include small-scale industry, which played a siderable role in the economy of pre-revolution- Russia. and add the number of workers and sans engaged in it, we find that the output per ker in pre-revolutionary Russia was one-ninth he American level.

n the period between 1913 and 1959 labor produc- y in the USSR, calculated on an annual basis per ker, rose nearly 11 times (the total power ca- ity per worker rose 13 times and electric power acity per worker, 22 times), while in the United es labor productivity (taking account of the new x) increased less than 3 times. For individual stries the ratio of labor productivity in the So- Union to that in the United States in 1959 was ollows: production of coal per worker in the R was about 25% of that in the United States; including casing head gas, more than 60%; steel duction, calculated on the basis of all workers he iron and steel industry, 60%; and cement, .

comparing labor productivity in Soviet and erican industry there are many methodological stions which require further elaboration, particularly the questions we have already mentioned: the comparability of the number of workers, comparability of labor productivity in separate branches of the machine-building and chemical industries. Problems of comparing labor productivity at the best plants in our country and corresponding plants in the United States and other countries are of great importance. Great difficulties are encountered, for example, in comparing the level of labor productivity in the machine-building industry. So far no generally recognized methods of obtaining comparable indices have been found, but ways of solving this problem for separate branches of the machine-building industry are already discernible.

It is particularly important to study the factors making for a growth of labor productivity, and specifically, the different composition of workers and the considerable proportion of auxiliary workers in our industry.

Comparison of the Volume of Agricultural Production

A comparison of the volume of agricultural production is a relatively easier task because the number of separate items of agricultural output is much smaller than in industry. Below we present data on the relationship between USSR and United States output of major agricultural products in 1959 (USSR in percentage of the United States):

All Grains.	67
including:	
Wheat.	223
Corn	11
Potatoes.	784
Sugar Beets.	284
Raw Cotton	48
Milk.	110
Meat and Animal Fats	50
Butter.	128
Wool	238
Eggs	37

In total milk production the USSR overtook the United States in 1958. In 1959 the USSR produced 62 million tons of milk and the United States, according to an official estimate, about 57 million tons. In 1959 the USSR produced 845,000 tons of butter, or 4 kilograms per capita, while in the United States, according to an estimate of the Department of Agriculture, per capita production, including the farmers' output, amounted to 3.7 kilograms. Thus, in per capita butter production the Soviet Union surpassed the United States in 1959. The Soviet Union exceeds the United States in the production of wheat, potatoes, wool and also in sugar beets and sugar cane combined (taking into account their sugar content). The USSR produces large quantities of flax fiber, sunflowers and some other crops which are not cultivated at all in the United States or are grown in small quantities. So far the Soviet Union lags behind the United States in the production of corn, raw cotton, vegetables, fruit, meat and eggs.

If we compare the value of the gross production of Soviet and American agriculture in 1959 in comparable prices, we find that in rubles Soviet output is 77% and in dollars it is 80% of the American output.

These calculations, just as a comparison of the production of separate items, show that total agricultural production in the Soviet Union in 1959 was only 20 to 25% less than in the United States, although last year the weather conditions were unfavorable in our country.

As for the rates of growth of agricultural production, they are several times higher in the Soviet Union than in the United States. In the last 15 years (1945-1959) the average annual rate of growth of agricultural production amounted to 6.7% in the Soviet Union and 1.7% in the United States. In the last six years (1954-1959) the average annual rate of growth of agricultural output was 7% in the USSR and only 2.3% in the United States.

Comparison of Labor Productivity in Agriculture

In comparing labor productivity in agriculture the main problem, after determining the relationship between the volume of output, is to establish the comparable number of people engaged in agriculture.

According to American statistics, the number of people employed on US farms amounted to 7.4 million in 1959 on the average. But American statistics, in large measure, do not take into account the number of hired workers and members of farmers' families who work only part time. (6) Moreover, American statistics do not include in agricultural work many jobs which in the USSR are performed by the collective farms and state farms themselves. Among these are the cleaning and drying of grain, the transportation of farm produce to the cities, delivery of the means of production to the livestock sections, partial preparation of livestock fodder, repair of machinery and equipment, repair of buildings, etc.

To make the labor inputs comparable it is nece sary to introduce the respective adjustments in t American statistical data. Taking into account th adjustments made by the Central Statistical Adm istration, we find that in 1959 approximately 12 lion people, and not 7.4 million, were engaged in American agriculture. In 1959, 33 million peopl were engaged, on an average annual basis, in Sov agriculture as a whole, including collective farm ers, workers and employees engaged in their per sonal subsidiary husbandry (not counting, of cour the time spent in the household economy not connected with agricultural production). Thus, the average number of people engaged in Soviet agri ture was 180% greater than in the United States, while total agricultural production was 20 to 25% less than in the United States. Consequently, lab productivity in Soviet agriculture was approxima ly one-third of the American level.

There is a still greater lag in labor expenditures for certain farm products. Thus, at the Pl nary Session of the Central Committee of the CPS in December 1958, Comrade N. S. Khrushchev pr sented data on the average time required to produce 100 kilograms of farm output in the USSR i 1956-1957 as compared with the United States in 1956:

	Number of times by which labor expenditures on Soviet state farms and collective farms exceed those on American farms	
	state farms	collective farms
Grain	1.8	7.3
Potatoes	4.2	5.1
Sugar beets	4.2	6.2
Raw cotton	1.6	2.3
Milk	2.1	3.1
Increase in weight of beef and dairy cattle	6.6	14.2
Increase in weight of hogs	6.8	16.3

Comrade N. S. Khrushchev pointed out: "It m be assumed that bourgeois statistics embellish real state of affairs. It may also be granted tha in the collective farms and state farms of our country, owing to shortcomings in the organizat of accounting and imperfect methods of determi

or expenditures, the actual figures are somewhat
ggerated. But even in this case our lag behind
United States in the level of labor productivity
agriculture is perfectly obvious."

t is also necessary to bear in mind that a com-
rison of data on the output per person engaged in
viet collective farms and in American farms must
be made mechanically. Comrade N. S. Khru-
chev, in his speech to the Chamber of Commerce in
s Moines on September 22, 1959, recalled in this
nnection that agriculture in the Soviet Union and
United States is based on entirely contrasting
nciples. "The collective farms," he said, "are
cooperative farms established through the volun-
y association of peasant households. For this
ason, the number of people working on a given
m is not the minimum necessary to till the soil,
tivate the crops and raise farm animals and
ltry. Rather, it represents the number of able-
lied collective farmers in the given cooperative.
cannot allow a state of affairs in which some
mbers of the cooperative work, while others are
rived of the right to work. We realize that there
shortcomings in the organization of labor and
utilization of manpower in our collective farms,
are doing away with these shortcomings. Of
rse, the fact that our farms are lagging behind
rs in mechanization and labor productivity is a
porary phenomenon. The socialist system of
iculture makes it possible to eliminate this lag
a brief period of time and to attain a higher la-
productivity than on your farms."

Ve know that labor productivity in the collective
ms, state farms and other state agricultural
erprises has risen more than four times as com-
red with labor productivity in pre-revolutionary
iculture (including the landed estates). The
en-Year Plan calls for raising labor productiv-
in the state farms by about 60 to 65% as com-
ed with 1958, and nearly doubling it in the col-
tive farms. These assignments will no doubt be
rfulfilled.

omparison of the Magnitude of National Income

he methods of calculating the national income in
USSR and the United States differ considerably.
calculation of the national income in the Soviet
on is based on the principle that the national in-
ne is created in branches of material produc-
, among which are industry, construction, agri-
ure, freight transportation, communications
trade, including the supply of materials and ma-
nery and the procurement of goods. Incomes in
non-production branches, namely, education,
lic health services and the state apparatus are
formed through the redistribution of the national income created in the branches of material production; consequently they have already been taken into account in the national income created in the sphere of material production.

In the United States, however, the national income is calculated as the sum of incomes formed not only in the branches of material production, but also in the non-productive branches. Thus, incomes of state institutions, the police and the army, which are formed out of incomes removed from the branches of material production, are listed in the national income. In other words, in the United States, some incomes are counted twice — in the branches of material production where these incomes are created and in the non-productive branches where these incomes are utilized. The non-comparability of the methods of computing the national income in the United States and the USSR is recognized by the Americans themselves. Therefore to make them comparable it is necessary to recalculate the national income of the United States according to the methodology accepted in the USSR, that is, without the double counting of the incomes in the non-productive branches, and to evaluate the national incomes of the two countries in the same prices. The appropriate calculations show that when properly compared the national income of the USSR in 1959 amounted to approximately 60% of the national income of the United States, while the per capita income in the Soviet Union was approximately half of what it was in the United States.

The rates of growth of the national income in the USSR are several times higher than in the United States. Hence, there is every ground for expecting that the USSR in the near future will surpass the United States not only in total national income but also in per capita national income.

A Comparison of Living Standards

The methods of comparing the living standards of Soviet workers and collective farmers with those of American workers and farmers present the most involved problems of all.

A comparison of the living standards of the working people of the USSR and the United States can be made on the basis of comparing a number of indices which indicate the level of satisfaction of the material and cultural requirements of different classes of the population.

In comparing the real incomes of the workers in the two countries one must not only compare money wages. It is a fact that in the USSR workers and employees, in addition to their money wages, receive considerable sums in the form of pensions, allowances, stipends, free education, free medical service and other payments and benefits at the expense of the state. Unemployment was fully abolished in the Soviet Union long ago. As a result of the higher living standard and the improved health services, the life span has been greatly lengthened in our country. In recent years the Soviet Union has had the lowest mortality rate in the world, while the increase in the population is higher than in most other countries. Account should also be taken of the fact that while in the United States a considerable part of the wages (approximately one-third) is spent on rent, in the Soviet Union only 4 to 5% of the budgets of workers' families go for rent and public utility services. The task set by the Party and the Government to eliminate the housing shortage in the next 10 to 12 years is being carried out successfully. All these factors affect the living standards of the population to a considerable extent and must be taken into account in comparing the real incomes of the working people in the USSR and the USA.

The living standards of the Soviet people so far are lower than those in the United States, a country which has not suffered a foreign invasion and has not fought wars on its own territory during the last 100 years. But although the individual wages of Soviet workers, when recalculated in comparable prices, are thus far lower than the wages of American workers, the working people of the USSR enjoy a number of advantages as compared with American working people. These include the absence of unemployment and security in the future, which scores of millions of American workers and members of their families lack. Other advantages include the lowest rent in the world, free education, including higher education. There are also the free medical services and a number of other benefits and services paid for by the state, of which the American worker cannot even dream. In the USSR there is no situation such as that in the capitalist countries, where the lion's share of the national income created by the working people is appropriated by the monopolists and other non-working groups of the population. In the Soviet Union the entire national income belongs to the working people and is used in their interests. Moreover, in the USSR the national income is growing several times faster than in the United States. Comrade N. S. Khrushchev, speaking on television in the United States on September 27, 1959, rightly said, in addressing the American people, that "though we are not yet as rich as you are, we are on the right path that leads to the achievement of the highest standard of living."

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The above-mentioned problems of the methodology of comparing various indices have been examined on the basis of Soviet and American indices, but they are also of more general significance in comparing the economic indices of the socialist ar capitalist countries.

A great deal of work on elaborating unified methodological principles of determining the mos important economic indices and scientific method of comparing the indices of economic developmen of socialist countries has been carried on in recent years by organs of the Council of Mutual Economic Assistance.

It is necessary to pool the efforts of the economists of the USSR and the other socialist countrie and direct them toward working out hitherto unsolved methodological problems connected with th peaceful economic competition of the two systems These problems should be discussed collectively. We must also expose more actively the falsifying methods and misinterpretations of our indices on the part of bourgeois economists.

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Literature Cited

(1) The principle of comparability is strictly observed in the official statements of Party and Government leaders. For instance, in his report to the May (1958) Plenary Session of the CPSU Central Committee, N. S. Khrushchev directly pointed out, when he compared the rate of overall increase in production in the USSR and the United States, that the data on the output of electricity "did not include power expenditure by electric po er stations for their own needs."

(2) See, for example, Agricultural Statistics 1957, issued by the US Department of Agriculture in 1958, p. 456.

(3) See S. G. Strumilin, Na putiiakh postroenii kommunizma, Sotsekgiz, 1959, p. 33.

(4) A comparison for this territory seems full justified to us, since the October Revolution originally triumphed on this territory.

(5) S. G. Strumilin, op. cit., p. 36.

(6) Members of farmers' families and domestic workers who do unpaid work on farms are included among those gainfully employed if they spend 15 hours or more in the course of the inve tigated week (The Handbook of Basic Economic Statistics, November 1959, p. 62).

Planovoe Khoziaistvo, No. 3, 1960

IOFFE:

he Level of Labor Productivity in the USSR and the USA

The building of communist society, which is be- g carried on successfully in the Soviet Union, is oceeding under conditions of peaceful economic mpetition between socialism and capitalism. The vel and rates of growth of labor productivity are e of the major indices of the course of the com- tition, a requisite for accomplishing the main eco- mic task of the USSR. V. I. Lenin pointed out that cialism will finally demonstrate its superiority er capitalism when it achieves a higher level of or productivity than prevails under capitalism. oreover, socialism must outstrip capitalism in or productivity not only in industry, but also in other branches of material production.

Calculation of the comparative level of labor pro- ctivity on the scale of all spheres of material oduction, or, as Marx put it, at the national level, kes it possible to establish to what extent the viet Union has advanced toward accomplishing e task set by Lenin, and to bring to light unutil- ed reserves inherent in the socialist economy.

In comparing the levels of labor productivity in e USSR and the United States it is necessary, first all, to take into account the nature of the use of or under socialism and capitalism. The rapa- us attitude to labor and its wasteful use in capi- ist countries are expressed not only in the istence of a huge army of unemployed there, but o in the distribution of the employed. In the ited States the mining industry had its largest mber of workers in 1917; the manufacturing in- stry, in 1943; construction, in 1956; agriculture, 1920; transport and public utilities (electricity d gas), in 1953. (1) The number of people en- ged in the sphere of material production is de- ning not only relatively, but also absolutely. In 56, for the first time in the history of the United tes, the number of office employees exceeded number of workers. In the opinion of the reac- nary magazine, Fortune, this allegedly means t the workers have ceased to be the main factor he country's labor resources. (2) The rates of wth of industrial output in the United States are so small (2 to 3% annually) that the increase is derived from the small rise in labor productivity in recent years.

In the Soviet Union the number of people employed in material production is rising steadily, and at the same time there is also an increase, both relative and absolute, in the number of people engaged in the educational system and the health services, which indicates the growing concern of the Party and the Government for the advance of the people's culture and the improvement of their health. The share of persons engaged in the educational system and the health services in the total labor force rose from 6% in 1940 to 9.1% in 1955 and 10% in 1959.

In the capitalist countries the number of people engaged in trade, the banking system, and above all in the state apparatus is growing steadily. The share of people engaged in the educational system and health services is dropping from year to year. Yet it is this index that is decisive for assessing the progressive nature of the distribution of those engaged in the non-material spheres.

Socialism does not know the losses caused by unemployment, strikes and lock-outs, the existence of a rentier class, excessive labor outlays in the sphere of circulation (in the United States every fifth employed person is engaged in trade), etc.

To compare the level of labor productivity in the USSR and the United States it is necessary, first of all, to have data on the total social product, the aggregate output in the spheres of material production, or as Marx said, the sum total of labor embodied in commodities.

One of the big shortcomings in the method of reckoning gross production, as is known, is the inevitability of double counting, as a result of which the dynamics of production, calculated in terms of value, do not always coincide with the dynamics of the physical volume of production.

American statistics even before the war went over to calculating the output of industry according to the sum of incomes received in industry, the net output plus depreciation ("value added"). According to data of the 1937 census (3) the share of a number of branches, whether calculated according to gross output or according to net output,

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A trial calculation based on data of the Economic search Institute, State Planning Committee of the SR.

coincides (textile, paper, rubber, shoe and leather, iron and steel industries). But the share of the food industry in gross industrial output was 18.6% and in net output it was only 13.3%. On the other hand, the share of the machine-building industry, calculated according to gross output, was 9.7% and in net output it was 13.8%. (4)

Labor productivity in the national economy can be calculated on the basis of the amount of the national income produced by each person engaged in the branches of material production, that is, in the sphere where the national income is created. But it is a fact that national income statistics in the capitalist countries are based on mistaken theoretical and methodological conceptions. In all capitalist countries the national income is calculated as the sum of incomes of individuals. Thus, the national income includes not only the produced incomes, but the redistributed incomes. That is why one and the same income may be calculated more than once, and this inevitably leads to double counting. According to estimates of Soviet economists, this double counting makes up not less than 20 to 30% of of the actual volume of the national income in the United States, Britain and the Federal Republic of Germany. (5)

In 1950 and 1957 statistical agencies of the United Nations published their calculations of national and per capita incomes. (6) But these data, too, are based on a method of calculating the national income according to the sum of incomes of all citizens of a given country, and this inevitably leads to a great deal of double counting. Moreover, the conversion of the national currency into dollars, as a rule, was done on the basis of the official rate of exchange, which often does not coincide with the actual purchasing power of the currency.

The problem of prices is a complex one. Although the laws of price formation in the capitalist countries are the same, customs barriers and other reasons lead to tremendous differences in national price systems. All the more involved is the problem of prices when comparing the level of production in countries in which different economic laws govern the formation of prices, as is the case in the USSR and the United States.

The enumeration of all these difficulties does not at all mean that a comparison of labor productivity levels in the entire sphere of material production is an insoluble problem. It seems to us that the calculation of the annual total social product according to net output would be the most correct method. Only such a calculation gives a correct idea of the labor society needs to expend to produce various goods. Indeed, the output per farmer in Britain or the United States is many times greater than the output for a peasant in Iran who uses a hoe or primitive plough of his own make. The high labor productivity of the farmer has been attained thanks to his being equipped with tractors, combines, tractor-drawn implements, etc. Conseque ly, the producers of these machines, those who make the metal for these machines, mine the coa and ore, etc., worked for this farmer. Their labo has been made available to society only through t labor of the farmer. On the other hand, no one ha worked for the Iranian peasant. Of course, even account is taken of all the labor expended in the production of farm products in Britain, the output per farmer will be much higher than per peasant Iran, because the machines enabled the farmer to do all agricultural jobs in optimal periods and in conformity with modern cultivation methods. But the gap in the levels of labor productivity of the British farmer and the Iranian peasant will be much smaller.

Of greatest interest, in our opinion, are calcula tions of the product created:

1. per man-hour worked in the sphere of mater al production; (7)
2. by the total number of persons engaged in t spheres of material production;
3. by the labor resources of a country, which consist of men between the ages of 18 and 60 and women between the ages of 18 and 55, except invalids and women who have two or more children

A comparison according to these three indices makes possible a profound analysis of the degree of utilization of the labor resources and the labo productivity level in each of the spheres of mate al production (in industry, agriculture, transport construction and trade), and on this basis the determination of a comparable level of labor produ tivity in the USSR and the United States in all ma terial production.

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In industry the relationships between the volumes of production can be calculated on the basis of data of the Central Statistical Administration the comparative level of output in the USSR and t United States and the indices of the growth of pro duction. If we take the level of the United States as 100, the level of the USSR was (in %):

1955	1956	1957	1958
41	43	48	55

American statistics single out from among the or force the so-called "productive workers," ich also include apprentices and service person- . To make the data comparable it is necessary add to the number of workers in the USSR appren- es and junior service personnel.

American statistics do not include in the cate- y of "industry" electric power stations, the gas ustry, fishing and water works. Prior to the 54 census they did not include workers engaged lumbering. (8) According to our calculations, it necessary to add 560,000-580,000 workers en- ged in the above branches to the total number of ductive workers in the United States.

There are also some differences in the methods calculating the number of employed. In the USSR this number is determined on the basis of the personnel lists. Consequently, these lists include persons who are on vacation or are absent from work because of sickness or because they perform some social duties, etc. American statistics give the number of employed on the basis of the payroll as of a definite date, including persons who are getting a paid vacation. Consequently, some workers are not reckoned in these lists. But their proportion is very small and can hardly influence the final estimates.

The level of annual labor productivity in Soviet industry as compared with the productivity level in the United States taken as 100 was: (9)

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	1955	1956	1957	1958	1959
Per worker	40	42	44	45	46
Per employed person	44	46	48	49	51

Lagging behind the United States in the level of or productivity, the Soviet Union greatly exceeds USA in its rates of growth, as may be seen from following data on the rise of labor productivity:

Period	USSR	United States
1913-1959	10.9 times	2.9 times
1929-1959	8.8 times	1.9 times
1950-1959	1.9 times	1.4 times

During the seven-year period (1959-1965) labor ductivity in Soviet industry per worker should e by 45 to 50%; as a result it will amount to 70% the present US level and to about 60% of the US el in 1965, taking into account the possible rise labor productivity in the Unites States between 58 and 1965. In view of the relationship between rates of growth of labor productivity in the SR and the United States, after 1965 another six or en years will evidently be needed to surpass the erican labor productivity level in industry.

What are the reasons for the higher output per rker in the United States as compared with the SR?

. Our lag is explained first of all by the fact t the Soviet Union inherited from pre-revolution- Russia an industry with a very low level of labor productivity. In 1913 it was only one-ninth of that in the United States. Much time is needed to overcome this lag, all the more so since the rates of growth of labor productivity in the United States are relatively high as compared with other capitalist countries. Account should also be taken of the destruction suffered by the Soviet Union in the first and second world wars and civil war.

The level of output per worker is affected by the exceedingly favorable location of metal ores and coal in the United States, as a result of which almost all the ore and about one-fourth of all the coal are extracted in open-cut mines, in which output per worker is 100 to 150% higher than in underground mines.

3. Power capacities, electricity per worker and mechanization of labor in the United States are substantially higher than in the USSR. Power capacities per worker are more than twice as high as in the Soviet Union. (10) Automatic and semi-automatic machines, conveyer belts with a set rhythm occupy a much larger share in the total plant of the United States; the level of mechanization of transport and subsidiary jobs is higher. The existence of specialized repair companies is also a contributing factor.

4. The level of specialization and cooperation in the United States is higher than in the USSR. As a result there are more opportunities for mass production, which leads to greater specialization of machinery and workers.

5. Methods of intensification of labor are used in the United States which are absolutely unacceptable for socialist countries. The fixed rhythm of conveyers is set at such speeds that most of the workers above the age of 40 cannot stand it and are compelled to stop working.

Soviet economists should study critically all factors which make for higher output per worker in the United States. It is clear that it is most important to study the reasons for higher labor productivity in particular branches and plants. According to data of the US Department of Labor, in some branches of industry output per worker at the best enterprises is three times as high as at the lagging plants.

In agriculture, calculation of the relative levels of productivity in the USSR and the United States does not present any great difficulties, since the value of 18 to 20 of the major agricultural commodities makes up over 90% of the value of all agricultural production in these countries.

To establish the level of production in the USSR and the United States we calculated the value of output of wheat, rye, barley, oats, rice, corn, millet, buckwheat, leguminous plants, potatoes, cotton, hay, tobacco, sugar beet, citrus and other fruits, meat, wool, milk and eggs. The gross output of these goods was first calculated in prices of the USSR and then in prices of the United States. In the grand total it turned out that the ratio of agricultural production in the USSR to that in the United States calculated in Soviet prices differed little from a similar comparison made in US prices. The difference was only about 10%, which is not of great importance in global estimates. (11) According to these calculations the output of agricultural products in the USSR was 68% of the US level in 1955 and 75% in 1958.

In analyzing these data account should be taken of the fact that 1958 was a record year for agricultural production in the United States. As a result of exceptionally favorable weather conditions the production of field crops in one year rose by 11% while total agricultural output increased by 9%. (12)

The statistics of employment in US agriculture suffer from such considerable shortcomings that it is practically impossible to get sufficiently reliable data and, what is most important, data that would be comparable with the number employed in Soviet agriculture. Therefore it is necessary to limit ourselves to calculations per man-hour or (what is the same thing) per man-year.

According to our estimates, in 1955 the following table shows the number of man-hours that were worked in Soviet agriculture.

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	Total number of man-hours worked (billions)	% of total
In state farms	5.4	9.7
In machine and tractor stations	.75	1.3
In collective farms	31.5	56.4
In the subsidiary husbandry of collective farmers	13.5	24.1
In the subsidiary husbandry of workers and employees	4.7	8.5
Total	55.85	100.0

The total number of hours worked in the state farms is calculated on the basis of data of the Ce tral Statistical Administration. From the total l bor outlays we excluded those in subsidiary indu trial establishments and in construction jobs. O the total number of hours worked in the collectiv farms we excluded labor outlays in construction capital repairs, the planting of orchards, in subsidiary establishments, and in irrigation and lan reclamation.

The labor outlays in the subsidiary husbandrie have been taken as equivalent to 30% of the labor outlays in the collective farms, which conforms data of budget surveys. Labor productivity in th subsidiary husbandries of workers and employee according to available data, is about the same as in the subsidiary husbandries of the collective farmers. The labor outlays in subsidiary husba ries of workers and employees were estimated the basis of output data in the subsidiary husban ries of collective farmers, on the one hand, an of workers and employees, on the other. On the basis of data on the male-female distribution of those engaged in Soviet agriculture and the gene ally accepted coefficients, all the hours worked were converted, for the sake of comparability w the United States, into hours worked by men.

The statistics of employment in US agricultur require very substantial adjustments. What is most striking in the statistics is the inadequate flection of the employment of female labor. According to official statistics the proportion of women in the labor force was (in %) as shown in the table on the top of the following page. (13)

Thus, while in the entire national economy th

Year	In the Entire National Economy	In Agri-culture
1920	20.4	25.4
1930	21.9	25.5
1940	25.3	24.4
1950	29.5	22.4
1955	31.5	23.0
1956	32.0	—
1957	32.6	—

oportion of women in the total labor force is owing, in agriculture it shows a tendency to de-ine. Of the 6.1 million women between the ages 17 and 60 who live on farms, 1.8 million were nployed in agriculture. (14) What do the other ur million women do? American economists re-y that they are keeping house. Yet it is generally own that in American agriculture women work as tensively as men. American statistics do not ass as agricultural labor the work which omen perform in servicing hired laborers on rms, while in the USSR the work of cooks in field mps is fully taken into account.

The inadequate reckoning of women's labor in US riculture is mentioned by the authors of a serious udy on the employment of women's labor in the ited States. (15) They note that only a small mber of women who do a considerable share of e unpaid labor on farms are considered by the reau of the Census and are included by the latter ong the employed.

The underestimation of the number of people em-oyed in US agriculture is also explained by the ct that American statistics do not class as farms ose households having less than three acres and marketed output of not more than 150 dollars an-ally. Nor are farms with more than three acres with a marketed output of less than 150 dollars cluded. (16)

Yet in the USSR all people working on collective rms, irrespective of the amount of workdays they in, are counted among those employed in agri-ture.

According to the 1950 census, 54.2 million people the United States lived in rural areas, of whom million were on farms. (17) It is clear that of 29 million people who lived in rural areas, but on farms, a considerable number also engaged agricultural labor.

To make Soviet and American statistics compara- it is also necessary, according to our estimates, to add to the number of employed in US agriculture the 200,000 people partly employed in grain elevators, the spreading of fertilizers (but not in their production, since that is a branch of industry), some people employed at feed-producing factories, etc. (18)

In the United States the repair of farm machines and implements is concentrated at specialized repair plants. That is why the labor outlays of farmers for the repair of equipment are very small.

It should be noted in this connection that US industry is taking over from agriculture one function after another, limiting its activities solely to work directly related to the natural process of reproduction. While formerly industry took over from agriculture the processing of animal products, now it is taking over from crop farming the operations performed before sowing and after harvesting (preparation of fertilizers and seed, drying, cleaning and sorting of grain, etc.). Some American economists have proposed that a new name be invented for farming to stress the qualitative differences between the old and current agriculture.

To keep a record of man-hours worked, American statisticians chose in each state a number of the most "representative" farms, which keep a record of labor outlays or establish standard norms for these outlays. As a rule, the record of the time worked is kept in April, in which, according to data for many years, the number of hours worked coincides with the average monthly figure (the peak period is September). The annual sample studies are corrected on the basis of periodic censuses.

The farmers who keep a record of the time worked indicate the jobs on which the labor was expended. Thus, the labor outlays for milk cows include the following jobs: care, milking, feeding, cleaning of the barns, the straining and separation of the milk and all other jobs related to the production of milk and cream. The labor outlays for the production of cattle feed are not included. (19)

It is clear that such intricate accounting can be conducted only on the farms whose bookkeeping is in good order, that is, on larger farms with a level of output per person much higher than the aver age for the country. The result is that the number of man-hours worked is greatly minimized. According to official statistics the number of hours worked annually on the average amounted to 1,770 in 1950 and 1,760 in 1953. (20)

According to data of Barger and Landsberg, (21) prior to the war the number of hours worked annually ranged from 2,000 to 3,500. A survey made before the war showed that farmers worked 2,700 hours a year. According to several sources the number of hours dropped by about 10% in comparison with prewar and now comprises about 2,500 hours. Clark also thinks that the number of hours worked annually is not less than 2,500. (22) Comrade Matskevich, Minister of Agriculture of the USSR, points out that American farmers have to work from 13 to 14 hours a day during the busy periods of the agricultural season, that is, not less than 3,000 hours a year. Thus farmer Alleman works daily from 6 in the morning to 7 in the evening with an hour's break for lunch, which comes to 3,000 hours a year. (23)

Taking all these data into account, we assume that the American farmer works on the average of not less than 2,200 to 2,500 hours annually.

According to our estimates the total number of people employed in US agriculture in 1955 was 11 million, which is 33% greater than the number given in official American statistics. In that year they worked 24 billion man-hours.

Total agricultural production in the USSR in 1955 was 68% of the American figure. The total number of man-hours worked in the Soviet Union was 55.85 billion and in the United States 24 billion. Thus, in 1955 labor productivity in Soviet agriculture in relation to the US level, taken as 100, was:

$$\frac{100x100}{24} : \frac{68x100}{55x85} = 29\%.$$

In 1956-1957 labor productivity in American agriculture was lower than in 1955, and in 1958 it rose by 8% as compared with 1955. In the USSR labor productivity in the collective farms in 1958 was 24.7% higher than in 1955 and in the state farms 23% higher. Consequently, in 1958 labor productivity in Soviet agriculture bore the following relationship to the US level:

$$\frac{29x124x100}{108x100} = 33\%.$$

What are the reasons for the higher labor productivity in the USA?

1. The United States has exceedingly favorable climatic and soil conditions for farming. Fertile soils, abundant precipitation which falls in the best periods, level terrain which creates ideal conditions for the use of machinery, and much hot weather — all this makes it possible to raise large and stable harvests with relatively small labor outlays.
2. A high degree of specialization prevails in American agriculture, which takes into account the soil and climatic conditions.
3. The level of mechanization of agricultural jobs is high in the United States.
4. Exceedingly great intensification of labor, typical of capitalism, is the rule in US agricultur Many farmers are compelled to work 10 to 12 hou daily the whole year round. Every year about 100,000 farmers are ruined and leave their nativ localities to swell the huge army of the unemploy Between 1950 and 1959 about one million farms were abandoned. (24)

Socialist agriculture in the USSR is raising lab productivity at rapid rates. Under the Seven-Yea Plan labor productivity in collective farms shoul double. Thus, at the end of the seven-year perio labor productivity in Soviet agriculture should amount to two-thirds of the US level. The amalga mation of collective farms, scientific methods of cultivation, specialization of collective farms anc state farms, the systematic advance of mechaniza tion and improvement of agricultural methods, th greater agronomical knowledge of Soviet agricultural personnel, the provision of greater econom incentives, more thorough and competent guidanc by Party and Government bodies — these are the tremendous reserves for the growth of labor pro ductivity, whose utilization has only begun.

In calculating the relative levels of labor produ tivity in construction in the USSR and the USA, th establishment of the comparable volume of construction work is the most intricate task.

In the United States some building contracts ar granted on bids and the results of these bids are published in the press. These reports, as a rule give data on the basic technical specifications, prices, etc.

To calculate a comparable volume of construction work we selected typical building projects: warehouses, office buildings, hotels, oil and gas pipelines, thermal power stations, etc., and estal lished their approximate cost in the USSR. On th basis of data of corresponding designing organiza tions in Moscow and estimates of the average co of a square meter of living floor space in the US and in the United States, a coefficient for convert ing "construction dollars" into "construction rubles" was derived. This coefficient served as th basis for recalculating the sum of capital investments in the USSR and the United States.

On the basis of building statistics the ratio of volume of construction work in the USSR to that the United States was as follows (in %, the level the United States taken as 100):

1955	1956	1957	1958
45	46	52	72

The sharp change in the ratio in favor of the So-
et Union in 1958 is explained by the growth of
pital construction in the USSR and its considera-
e decline (by 20%) in the United States.

Prior to 1945 American statistics took account of
l building workers. Since 1945 current statistics
ecord only workers employed by special building
rganizations. If building work is done directly by
firm, municipality or state, the people employed
these jobs are not listed as building workers.

On the basis of current statistics and the 1950
nsus we established the necessary adjustments to
e data on the number of building workers published
the United States. The data on the number of
ilding workers in the USSR are obtained from ma-
rials of the Central Statistical Administration.

According to these data, the level of labor produc-
vity in construction in the USSR was 47% of the US
vel in 1955. It was 49% in 1956, 53% in 1957 and
out 56 to 58% in 1958.

The main factors which make for higher labor
oductivity in construction in the United States are
e high degree of mechanization of loading and un-
ading jobs, the extensive use of so-called "minor"
echanization, the high level of standardization,
e supply by industry of prefabricated parts, sec-
ons and assembled elements, and also considera-
e successes in the standardization of designing
ork.

A comparison of the levels of labor productivity
transportation services in the Soviet Union and
e United States is very difficult because of the dif-
rent methods of reckoning the number employed
motor transport in both countries. For example,
the USSR all those employed in loading and un-
ading operations are classed among those em-
oyed in motor transport, whereas in the United
ates only those who are engaged in loading and un-
ading at central warehouses are included.

Freight traffic of Soviet railroads amounted to
1 billion ton-kilometers and passenger traffic to
1 billion passenger-kilometers in 1955. Total
il traffic totalled 1,112 billion ton-kilometers.
or the United States the respective figures were
0 billion ton-kilometers and 46 billion passenger-
lometers, or a total of 956 billion ton-kilometers.
e number of persons employed in railroad trans-
rt amounted to 1,980,000 in the USSR (25) and to
071,000 in the United States. (26) There were
2,000 ton-kilometers per railroad employee in
e USSR and 896,000 ton-kilometers in the United
ates.

Thus, on Soviet railroads labor productivity was
% of the US level in 1955, 75% in 1958 and about
% in 1959.

The lag of the USSR behind the United States, notwithstanding the fact that railroad facilities are utilized better than in the United States (the average daily run of a freight locomotive in the USSR is one-third longer than in the United States and the volume of traffic per kilometer is 3.7 times higher than in the United States), is explained by many factors. The most important of these are as follows: The transfer of the railways to Diesel traction has been completed in the United States; the capacity of railroad cars is larger than in the Soviet Union; the level of mechanization of loading and unloading work, track and repair jobs is higher. Mention should also be made of the much higher intensity of labor on US railroads as compared with the USSR and also with West European countries.

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All of the above estimates make it possible to calculate the average level of labor productivity for the national economy of the USSR as compared with the United States. It amounted to 36% in 1955, 38% in 1956, 43% in 1957 and 44% in 1958. Additional calculations, which include a comparison of labor productivity in wholesale trade in the USSR and the United States, (27) show that the level of labor productivity in the national economy of the USSR as a whole was 40% of the US level in 1955, 42% in 1956, 45% in 1957, and 47 to 48% in 1958.

These calculations, of course, cannot lay claim to absolute precision. But they again demonstrate the correctness of our Party's directives concerning the huge reserves for increasing labor productivity inherent in our socialist system. The tapping of these reserves can and should reduce the period for accomplishing the task set by Lenin: to surpass all capitalist countries in the level of labor productivity and thereby conclusively prove the superiority of socialism over capitalism.

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(2) Fortune, April 1956.

(3) Biennial Census of Manufactures, Vol. I, W. 1937, p. 22.

(4) At present, demands are being made in the American press to shift again to calculating the volume of production according to gross output because the growth of automation and mechanization has brought about a decline in wage expenditures, and when changes in production are calculated on the basis of net output they do not fully reflect changes in its physical volume.

(5) Vestnik Statistiki, 1959, No. 6, p. 43; Mirovaia Ekonomika i Mezhdunarodnye Otnosheniia,

1958, No. 6; 1959, No. 5; M. V. Kolganov, Natsional'nyi dokhod, Gospolitizdat, 1959, p. 137.

(6) National and Per Capita Income of 70 Countries in 1949, N. Y., 1950; Per Capita National Product in 55 Countries in 1952-1954, N. Y., 1957.

(7) Such an attempt has been made by the well-known British economist Colin Clark in his book The Conditions of Economic Progress, London, 1957, which has been published repeatedly. But Clark calculated the national income as the sum of incomes of individuals, without attempting to establish the extent of double counting. In the number of man-hours worked he included the "labor" of the capitalists and renters! He calculated the income of each country in "international units" which he himself devised on the basis of the value of a series of products, which also arouses serious doubts.

(8) At the end of 1959 the Federal Reserve Board issued a new index of industrial production which, for the first time in the history of the United States, includes electric power stations and the gas industry. But the workers employed in these industries have so far not been included in the total number of those employed in industry. See Economist, January 9, 1960, p. 108.

(9) Calculated on the basis of data of the Central Statistical Administration of the USSR and the US Department of Labor giving the dynamics of labor productivity in Soviet and US industry for 1955-1959 as follows (1955 = 100):

Year	USSR	United States
1955	100	100
1956	107	102
1957	114	105
1958	121	108
1959	129	113

(10) The well-known Swiss economist Rostas has tried to establish a direct connection between the level of labor productivity in Britain and the United States and power capacities per worker in these countries. But, in analyzing the correlation of labor productivity and power capacities per worker in some branches, Rostas was forced to admit that this conformity exists only in six branches, while in 22 branches it is absent. Moreover, in the cement and fishing industries of Britain output per worker is higher than in the United States while power capacities per worker are lower. See Comparativ Productivity in British and American Industries, London, 1954. This once again confirms that the level of output per worker depends on a number o factors and the attempts to "tie it down" to one o them cannot be successful.

(11) In calculations of industrial production of the United States and Britain, made by United Nations agencies, the difference was 28% and for th industrial production of the United States and France it was 36%. See the work of Kravis and Gilbert, International Comparison of National Pr uct, OEEC, Paris, 1954.

(12) The Handbook of Basic Economic Statisti March 15, 1959.

(13) Statistical Abstract of the US, 1957, Washington, 1958, p. 210; The Handbook of Basic Economic Statistics, May 15, 1959.

(14) Statistical Abstract of the US, 1957, Washington, 1957, p. 24.

(15) Womenpower, National Manpower Council N. Y., 1957, p. 81.

(16) Statistical Abstract of the US, 1957, Washington, 1958, p. 613.

(17) Ibid., pp. 20, 615.

(18) This will make up 0.2% of the total numbe employed in agriculture.

(19) Agricultural Statistics 1956, W. 1957, p. 479.

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(22) C. Clark, The Conditions of Economic Progress, London, 1957.

(23) V. Matskevich, Chto my videli v S Sha A Kanade, Gospolitizdat, 1956, pp. 31, 35.

(24) The Magazine of Wall Street, November 1959.

(25) Transport i sviaz SSSR, Gosstatizdat, 19 p. 22; Statistical Abstract of the US 1957, Washington, 1958, p. 561.

(26) The average annual rate of growth of labor productivity on US railroads between 1950 a 1959 was 2.9%. See Economic Trends and Outlo No. 9-10, 1959.

(27) In the United States over two million people are engaged in wholesale trade. Yet, the experience of the USSR and the other socialist cou tries where planning of trade has been introduce demonstrates that the functions of wholesale tra can be reduced to storing, sorting and packing, and that these operations can be performed by tens of thousands instead of millions of people.

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ECONOMIC THEORY

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BRONSHTEIN:

istribution of Differential Rent Under Socialism

The characteristics of rent relations under so- lism encompass the main aspects of the econom- interrelationships of two production sectors: the te sector, and the collective-farm cooperative ctor. A scientific understanding and proper ap- cation of these factors are decisive in the prac- al management of expanded reproduction in the llective-farm sector and the national economy as whole.

Economic literature abounds in serious investiga- ns of the problem of differential rent in a social- society. However, a number of economists hold ferent views not only on the theory of rent, but o on the practical aspect of its distribution.

In order to ascertain the principles governing the tribution of differential rent under socialism, it necessary, to begin with, to review its charac- istics, conditions, and origin.

Under socialism differential rent is the surplus income arising in collective farms owing to the sence of certain natural and economic features agricultural production.

The limited quantity of land tracts that are rela- ely advantageous because of their fertility and ation is a natural feature of collective-farm pro- tion. In order to satisfy the continuously grow- requirements of socialist society, relatively rer tracts, too, are brought under cultivation. en commodity-money relations prevail, it there- e becomes necessary to establish a price level ich will ensure the possibility of expanded repro- tion (i.e., will cover the socially necessary out- s and yield a net income), even in collective ms operating in objectively marginal natural con- ons. (1) Hence, the collective farms cultivating atively good land, or cultivating land with a higher ree of intensity at the cost of additional outlays, l receive a surplus net income which constitutes material basis of differential rent under social- n.

n connection with surplus net income, rent rela- ns arise under specific social and economic con- ons only. Under socialism they are due to the existence of two production sectors and express the specific relationships between two classes in socialist society. In this situation, as an object of ownership land is state property, while as an object of economic operation it is used by the collective-farm cooperative sector. The collective farms conduct their own economic activity on the land, using the labor of their membership and their own means of production. Therefore, the differential rent is formed as a component part of the collective-farm product which belongs to the farm.

In a classless society all means of production will become general public property; hence, rent relations cannot arise in it since the total surplus net income (product) will belong to the whole society.

The source of differential rent is the more productive labor of the collective farmers who enjoy more favorable natural and economic conditions. In some cases this is due to higher natural fertility of the soil, better climate or location of the given economic unit. The resulting surplus net income forms the material basis of differential rent I. The source of differential rent II is the higher labor productivity resulting from the additional outlays of the collective farms engaged in more intensive production. In order to develop a scientific basis for the distribution of differential rent, these distinctions in the formation of the surplus net income in collective farms must be precisely defined.

This can be achieved only on the basis of a concrete analysis of the economic conditions prevailing in collective-farm production.

The distribution of differential rent under socialism is of a totally different nature than under capitalism, for in capitalist society the ground rent produced by the surplus labor of farm workers is appropriated by big landowners.

Under the socialist system the manner in which the differential rent is distributed is in full harmony with the nature of socialist production relations and the operation of the economic laws of socialism.

When land is nationalized, differential rent I must be fully turned over to the state. This is due to the fact that in this particular case the surplus product is connected with natural factors which cause higher labor productivity, and which are national property. Differential rent I is not due to additional inputs of labor into the soil. It follows, therefore, that if the collective farms located in better natural conditions were to retain it, this would violate the economic law of distribution according to work performed. Since today additional outlays come mainly from the collective farms themselves, they must consequently receive the biggest share of differential rent II. But since a portion of the latter is due to the work of enterprises functioning in the state sector (Tractor Maintenance Stations servicing the collective farms, reclamation work of state enterprises, etc.), a proportionate share of this rent must go to the state. The share of differential rent II allocated to the collective farms is an effective incentive to intensify production.

The above-cited principles of distribution of differential rent I are opposed in the USSR by a number of agricultural economists. Opposite viewpoints are formulated in the works of I. Kozodoev and A. Pashkov dealing with the problem of differential rent in socialist society. (2) These authors deny the relationship between the realization of landed property and the appropriation of differential rent. Among other things they reject the well-known premise that the logical ground for transferring differential rent I to the socialist state is the nationalization of land. What are I. Kozodoev's and A. Pashkov's arguments? First, that transfer to the socialist state of differential rent I on the grounds of nationalization of land contradicts the fact that the peasants have been given free tenure of land. Second, the assertion that the state appropriates rent in its capacity of landowner amounts to identifying the land as an object of ownership with the land as an object of economic activity. Third, although in the People's Democracies the state does not own the land, it nevertheless receives differential rent. Fourth, in the Soviet Union, where the land has been nationalized, in practice a major share of differential rent (including differential rent I) remained until recently in the hands of the collective farms.

Let us analyze these arguments.

Comrade Kozodoev holds that it is dogmatism to apply under socialist conditions Marx's proposition that "whatever the specific form of rent may be, all types have this in common: the appropriation of rent is that economic form in which landed property is realized ...," (3) or Lenin's statement that "nationalization means transfer of rent to the state." (4) I. Kozodoev asserts that these statements refer to the capitalist system and to the nationalization of land carried out by the bourgeoisie.

But what about article 17 of "The Fundamental Law on Socialization of Land," signed by Lenin a endorsed at a time when nationalization had alrea been carried out by the proletarian dictatorship?

Here is what it states: "Surplus revenue due t the natural fertility of the best tracts of land and their more convenient proximity to markets is turned over to the Soviet authorities for use for p lic needs." (5)

I. Kozodoev and A. Pashkov supply different in pretations of this article.

A. Pashkov asserts that this law in fact expres es the Social-Revolutionary demand for equalitarian land tenure. (6) But he contradicts himse by stating that adoption of this equalitarian land d tribution on the basis of a consumption-labor quo ruled out the possibility of collecting differential rent I from the peasants for use by the Soviet sta Moreover, he attempts without any grounds whats ever to relate the transfer to the state of differe tial rent I to the concept of redistribution which holds that the source of differential rent is eithe the labor of industrial workers or the labor of pr ducers who are cultivating marginal tracts. A. Pashkov believes that the economists who agree with the necessity of turning over all of different rent I to the state allegedly proceed from the co cept that rent is not created by the labor of colle tive farmers but is due to excessive prices paid the working class. However, there is no inner lo in this, for the demand to transfer differential re I to the state stems not from an erroneous interpretation of its origin, but from the nationalizati of land. (7)

I. Kozodoev holds that article 17 was introduce as a weapon in the Soviet system's struggle agai the kulaks. It is true that collection by the state differential rent I under the existing circumstan placed restrictions on the kulaks; but that is not full significance of the article. Here it is a matt of turning over to the state only the surplus reve derived from the natural fertility and location of land, while in the kulak husbandries differential rent II played a prominent part. It will be reca that in the conditions prevailing in 1918 article 1 was not generally put into effect because its pra cal application required a good deal of prelimina work to obtain relative appraisals of soil fertilit Restrictions on kulaks were imposed by the Sovi government in the first place by confiscating fro them 50 million hectares of land and by applying class principle in the system of food assessmen

Thus, article 17 meant neither the acceptance the Social-Revolutionary agrarian policy, nor

as its significance limited to restrictive measures
ainst the kulaks. This article was the direct out-
me of the Marxist-Leninist doctrine which holds
at, whatever its type may be, rent is only a form
realization of landed property. Hence, the trans-
r of differential rent to the state is an economic
nsequence and expression of land nationalization.
is is not in conflict with the fact that the land was
ven to the peasantry in free tenure. Only redemp-
on would transform the land into private or group
operty of the peasants, provided they paid its
rice," including the total capitalized rent (abso-
te + differential). But the nationalization of land
rried out by the Soviet state abolished absolute
nt, and the peasantry received in free tenure 150
illion dessiatins of land confiscated from big land-
rds, the crown and monasteries. Moreover, they
ere relieved from paying their debts to the Peas-
t Land Bank, which totalled 1,300 million gold
bles, and from paying annual rentals to big land-
rds amounting to about 500 million gold rubles.

The Bolshevik Party headed by Lenin consistently
held the principle of giving the landlords' estates
the peasants in free tenure, but it insisted that
nce land was nationalized the state should receive,
a means of realizing its landed property, the dif-
rential rent resulting from fertility and location.
is was formulated in the law on socialization of
nd which Lenin signed, including article 17.

Comrade Kozodoev asserts that "under socialist
oduction relations differential rent boils down to
e realization by collective farms and their mem-
rship (household plots) of land ownership as an
ject of economic activity," (8) and that the forma-
on of differential rent in collective and individual
sbandries is due to the fact that, as an object of
onomic activity, the land belongs to them and not
the state.

To our mind these views reduce state ownership
land to a fiction, replacing it in actual fact by
oup ownership. In that case it is not clear on
at grounds the state should receive from the col-
ctive farms the share of differential rent I, which
Kozodoev's opinion, it is appropriate to transfer
society. His explanation is that the surplus rev-
ue derived from free natural forces belongs to the
ole of society. This is indeed why it becomes the
operty of the whole society and is turned over to
e state in the form of rent, because due to nation-
zation the monopoly of private ownership of land
abolished and the product of free natural forces
comes national property. The opposite is the case
der conditions of private ownership of the land,
in this case the surplus net revenue derived
om natural fertility or location cannot become a
blicly owned product.

The transfer to the state of differential rent I does not mean equating land as an object of property with land as an object of economic activity. If the state controls the land both as an object of property and as an object of economic activity, then it makes the additional investments and consequently receives the resulting surplus net income.

In the People's Democracies, while the state does not own the land, it nevertheless receives a share of the differential rent. Comrade Kozodoev takes up this point in an attempt to deny the dependence of rent appropriation under socialism on land ownership. But one must make a strict distinction between the economic form of realization of landed property, which takes place through the appropriation of ground rent by the owner of the land, and the participation of individuals or whole enterprises in providing for the general needs of the state. The latter is also necessary when the land is privately owned. In this case the landowners transfer to the state a part of the differential rent, while the differences in fertility and location of land become a definite objective criterion for determining the degree of participation of the landowners in providing for the general requirements of the state. In taking account of the fertility and location of the soil this participation rests on a firm objective basis. Moreover, by appropriating a substantial share of the capitalist ground rent, the People's Democracies have restricted the development of capitalist elements in agriculture.

In analyzing the rent relations in the People's Democracies it is necessary to take account of the process that is taking place there with respect to the form of landed property, namely, the transformation of private ownership into cooperative ownership, which is gradually coming closer to the status of general public property. Thus, the process of socialist transformation of agriculture is modifying the nature of rent relations.

In the initial stage of development of producers' cooperatives, in most of the People's Democracies the land belonging to the peasants who join the cooperatives remains their private property. At this stage peasant landed property is realized mainly through the economic form of distribution of part of the income according to the quantity and quality of the land contributed to the cooperative. The income received by a peasant for the land he contributed is not merely the redemption price for the resources he has invested in the soil; it also includes a certain amount of differential rent I. The size of the income is in direct relation to the natural fertility of the land owned by the cooperative member. (9)

As socialist relations in agriculture develop in the People's Democracies, the share of the product distributed among cooperative members for their land shares is being reduced. Stoppage of redemption payments actually means that the land becomes cooperative property and the cooperative is receiving the differential rent. Since the cooperatives contribute to the formation of general state funds, they turn over to society part of that rent.

Further progress in socialist agriculture in the People's Democracies will require the elimination of the limitations due to group ownership of land and of the resulting rent relations. To achieve a more consistent application of the socialist principle of distribution according to work in the cooperatives, the state will have to collect a larger share of rent accruing from the use of free natural forces. This process will bring the group form of land ownership closer to the form of general public ownership.

And, finally, how are we to deal with the view that until recently the largest share of differential rent I was retained by the collective farms in the Soviet Union? It is indeed this fact that is used by I. Kozodoev and A. Pashkov as their chief argument for their theoretical concept of the distribution of differential rent. They also tried to prove that in the future, too, the bulk of the rent should be left to the collective farms. Here is how I. Kozodoev puts it: "Taking into account the necessity of stimulating collective-farm production and a closer alliance of the working class with the peasantry, and the fact that land as an object of socialist economic activity is controlled by the collective farms, and that, therefore, they should not be deprived of those advantages which are derived from more favorable conditions of cultivation, the major portion of the rent must remain with the collective farms." (10)

First of all we must distinguish between the theoretical principles of distribution of differential rent under socialism and the concrete historical conditions in which these principles are translated into reality. Above we have demonstrated why differential rent I should be turned over to the state when land is nationalized. However, so far it is impossible in actual practice to collect from the collective farms the full surplus net income accruing from fertility or location. The magnitude of the share that is collected depends on concrete circumstances.

To collect the full differential rent I, the state must have an objective criterion — an assessment of the relative fertility and location of soil in different collective farms. Until recently such assessments were not made in the USSR. Hence, differential rent I could only be collected on the basis of an approximate standard (based on large soil and climatic zones). To put an end to the subjective approach of the local authorities to procurement policy and to their attempts to collect differential rent II, resulting from a more intensive cultivatio in certain collective farms, the Communist Party and Soviet Government adopted at the September 1953 Plenum of the Central Committee the pe hectare principle of state procurements. Obligatory delivery quotas and prices were differentiate only according to the economic zones of the count To the extent that progress is made in assessing the relative earning power of different tracts of land, a fuller and more differentiated collection o rent based on the fertility and location of soil becomes possible. (11)

However, transfer of the total amount of differe tial rent I to the state will not be feasible even in this case. It is impossible in actual practice to a certain exactly the origin of this given surplus net income — whether it is due to natural fertility or to additional outlays for improving the soil. In addition to this there is a continuous process of change in the economic and natural conditions of collective-farm production. Hence, for all practical purposes we can only speak of the closest possible approximation to scientific standards in the distribution of differential rent under socialism.

There have been certain historical reasons which precluded full recovery from the collective farms of differential rent I. In different areas wi distinct soil and climate conditions, varying standards of living prevailed throughout the ages among t peasantry. This factor had to be taken into account i distribution of rent and after agriculture was sociali

The share of differential rent I allotted to the c lective farms creates a certain incentive for rapi ly bringing under cultivation land tracts which are more favorably located and of superior fertility. It was particularly important to take advantage of this incentive when agriculture was lagging and when a swift advance in farm production to ensure an adequate supply of farm products to the industrial centers required that we rapidly bring under cultivation the more fertile tracts and those situated near suburban areas. This explains why afte the September 1953 Plenum of the Party Central Committee a larger share of the rent was allotte to the collective farms. But this kind of incentive can be of a temporary and limited nature only. T further expansion of agricultural production depends on the active economic development of the land in all the collective farms and areas, and on more intensive exploitation. In this situation, all cation of the major share of differential rent I to the collective farms which have the best land ceas to be an incentive; on the contrary, it obstructs t certain extent the growth and intensification of pr duction in all collective farms.

Comrades Kozodoev and Pashkov have made an
osolute out of the incentive provided by allocation
the collective farms of the major share of dif-
rential rent.

They assert that if the rent is due to the farmers'
gher labor productivity, then in order to stimulate
is labor a considerable part of differential rent I
ust be given to the collective farms.

But one must clearly define what is the cause of
gher labor productivity. If additional investments
the land are made by the collective farms, allo-
ation of the returns from these investments to the
rms will effectively stimulate more intensive pro-
uction. If, on the other hand, higher labor produc-
vity is due to the use of free natural forces, the
urplus net income left to the collective farms will
ot act as an incentive to intensifying production; it
ill act counter to the economic law of distribution
ccording to work. (12)

Comrade Kozodoev's insistence that a considera-
e share of differential rent I should be allocated
the collective farms as an incentive is in contra-
ction with other correct propositions he formu-
tes. Here is what he wrote: "From the coal mines
e state collects a rent, while in timber felling it
eceives a rate of payment per stump. These rates
epend on natural conditions. But should the state
il to appropriate this surplus (rent, stump pay-
ent), the enterprise which enjoys the better condi-
ons would retain excessively large profits which
e due not to higher production efficiency or tech-
cal innovations, but to the free forces of nature.
he enterprises functioning in different natural sur-
undings would be placed in unequal conditions.
he ones enjoying relatively advantageous natural
nditions would lack the incentive to increase their
lume of output through more effective additional
vestments." (13) The question arises: on what
ounds does something that Comrade Kozodoev re-
rds as perfectly fitting in the state production
ctor become unjustified in the collective-farm co-
erative sector, and is criticized by him as equali-
rianism. (14) Is it not obvious that the enter-
ises in both sectors are socialist by definition,
d that distribution according to work is the only
plicable principle in both cases?

If we assume that the retained differential rent I
n be regarded as a constant factor stimulating the
owth of collective-farm production, then the ques-
on arises: What is to be done to stimulate the col-
ctive farms situated in less favorable natural con-
tions; how is their rapid advancement to be
hieved?

The rate of labor remuneration in the collective
rms is in proportion to the gross income. How-
er, the size of the latter depends not only on the
economic activity of the membership, but to a large extent on objective natural factors. If the surplus net income accruing from these factors is not turned over to society, the membership of different collective farms, with equal inputs of labor, will receive unequal incomes and the difference between the higher and lower rates of remuneration will not be justified. (15) This creates particular difficulties in raising the efficiency of the lagging farms located in objectively poorer working conditions. Comrade Pashkov quite rightly remarks that the disadvantages of the collective farms which cultivate the "worst" tracts should be compensated by measures helping to intensify production. The collective farms located on the "worst" tracts operate with low rates of return and their possibilities in this regard are very limited. It is the state that must come to their aid. If it fixes the prices of farm produce with due regard for the actual conditions on the worst tracts and leaves the differential rent I to the collective farms cultivating better land, then one may ask whether it will be correct to demand of the state that it should finance the measures for intensifying production in the backward farms and areas. On the contrary, transfer to the state of differential rent I provides the necessary funds for extending economic aid to the collective situated in the areas with poor soil and climate, and equalizing labor conditions in the collective farms. (16)

In support of his concept of differential rent distribution Comrade Kozodoev cites numerous cases, dating back to the period preceding the June 1958 Party Central Committee Plenum, in which collective farms enjoying favorable natural conditions retained a large share of differential rent I. Moreover, these collective farms derived an additional revenue from higher average prices. On the other hand, the collective farms which cultivated less fertile, unfavorably located tracts were placed in difficult economic conditions compared to those enjoyed by the former group.

Obviously this situation could not last long, for it hampered the advancement of agricultural production. The further development and improvement of rent relations in our country stems from the implementation of the historic decisions reached at the February and June (1958) Plenums of the Party Central Committee and at the 21st Party Congress.

Reorganization of the Machine and Tractor Stations, the sale of farm machines to the collective farms, and abolition of payments in kind were followed by a substantial rise in the amount of differential rent II, and by an increase in the share of differential rent I left to the collective farms. This made for greater incentives to intensify farm production.

The distribution of differential rent I underwent important changes following the abolition of obligatory deliveries and introduction of uniform prices by zones, depending on natural, climatic and economic conditions. Speaking of the economic relations existing between the two production sectors, Nikita S. Khrushchev stressed that "... material wealth must be fairly distributed among the working people depending on each employed person's contribution to the common objective, i.e., it is necessary to observe the socialist principle of distribution according to quantity and quality of work. This principle must be consistently applied both in town and country." (17)

After the June 1958 Plenum of the Party Central Committee the share of differential rent I left at the disposal of collective farms was drastically curtailed. But this did not affect the incentive to develop agricultural production. On the contrary, this brought about more favorable conditions for implementing the principle of material incentive and of the economic law of distribution according to work performed in the collective-farm cooperative sector. A number of collective farms with a sound economic structure (particularly in the areas producing cotton, flax, hemp, and citrus fruits, the farms situated near cities, or the ones enjoying very favorable natural conditions) cannot any longer receive excessive incomes due to the sale of the bulk of their produce at high prices. On the other hand, most of the collective farms which heretofore sold the bulk of their marketable produce to the state mainly in the form of obligatory deliveries and payments in kind for Machine and Tractor Station services are now in a much better position. State outlays for the purchase of farm produce will be distributed in fairer proportions among the collective farms and economic regions with a view to stimulating growth of production not only in the best farms enjoying particularly favorable conditions, but also in all the farms and regions.

In support of the above one may cite relevant data on Estonian collective farms. In 1957 the collective farms in the Tartu and Elva districts, where the bulk of the soil has a slight podzolic content and is relatively fertile, sold their milk at an average price of 1.5 rubles per liter. In the Tartu district the average production cost of a liter of milk in 1957 was 1.17 rubles. (18) The collective farms in the Otepia, Vyri and Vastselina districts, situated mostly on sour and eroded soil with slight humus content and a ground configuration not convenient for farming, produced almost 80% less milk per 100 hectares of farm land in 1957 than their opposite numbers in the Tartu and Elva districts, and sold it on the average for 0.97 to 1.03 rubles a liter. The estimated cost of production of one liter of milk in these districts was 20 to 25% higher than in the Tartu district. It follows that the collective farms in the Tartu and Elva districts could retain a major shar of differential rent I; the farms of Otepia, Vyri an Vastselina districts, on the other hand, had very unfavorable conditions for reproduction and had to remunerate their memberships at a much lower rate.

Since the June 1958 Plenum of the Party Centra Committee the collective farms in all these districts sell their milk at a uniform state purchase price of 1.3 rubles a liter. In the Tartu and Elva districts the farms now receive a smaller share o the net income accruing from better natural conditions. In these districts higher profits now depen on more intensive cultivation. At the same time the farms in the Otepia, Vyri and Vastselina districts derive a much higher revenue from the sale of their produce to the state. They can now earmark larger funds for expansion of production and higher remuneration of labor.

The process of perfecting rent relations has not yet been completed. At present, differential rent is retrieved by the state mainly through the mediu of zonal prices whose differentiation based on var ing soil, climate and economic conditions has increased greatly. But the varying natural conditio within the zones and administrative districts are not taken into account.

The Tartu district is a case in point. It has var ing soil conditions, and after the new state purcha prices were introduced the farms which had the best land were on the average more than twice as profitable as the ones situated on poorer soil. (1

When the economic assessment is completed an sufficient data is available on the relative fertilit of various land tracts, it will be possible to achie a higher rate of efficiency in collecting differenti rent I for the needs of the state. It would be mor advisable to carry this out not through the price mechanism, but through the medium of a differentiated rent tax. This method offers considerable advantages: it is simpler and more flexible; it facilitates a differentiated approach to each colle tive farm on the basis of a single state purchase price. (20) This mechanism is now being succes fully used in retrieving differential rent I from th household plots of the collective farmers. (21)

The process of perfecting rent relations under socialism, to begin with, pursues the aim of consolidating their socialist character, of implementing more consistently the principle of material in centive and distribution according to work performed in all branches of the national economy. the field of rent relations it is necessary to curta

cessive differences in incomes and the remunera-
on of labor in the collective farms. This will
adually bridge the gap between collective-farm co-
erative property on the one hand, and general pub-
: property on the other, strengthen the alliance be-
een the working class and the peasantry and the
aternal friendship of the Soviet nationalities, and
pidly help to fulfill the great task of communist
nstruction set by our Party.

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(1) Certain economists hold that to determine the
agnitude of the social value of the collective-farm
oduct on the basis of outlays on marginal land al-
gedly means accepting the individual labor input
lagging and inefficient collective farms as so-
ally necessary (see, for example, Voprosy Eko-
miki, 1958, No. 9, p. 9). In actual fact, the econ-
nists in favor of determining the value of farm
oduce on the basis of the yield of marginal land
oor fertility and location) hold that all other con-
tions on these tracts (degree of mechanization,
oduction organization, farming techniques, labor
tensity, etc.) should be average or even average-
ogressive in the given branch. Denial of the
cessity of price formation for farm produce
sed on objectively poorer conditions of operation
ay have the practical consequence that the farms
ltivating relatively inferior land will not be able
fulfil the process of normal reproduction.

(2) I. Kozodoev, Differentsial’naia zemel’naia
nta pri sotsializme, Moscow, 1956; I. Kozodoev,
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(3) Karl Marx, Capital, Vol. III, Moscow, 1959,
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(4) V. I. Lenin, Collected Works, Vol. X, p. 160,
ssian edition.

(5) Dokumenty i Materialy Akademii Nauk SSSR,
rarnaia politika Sovetskoi vlasti (1917-1918),
54, p. 137.

(6) See Voprosy ekonomiki, planirovaniia i sta-
tiki, 1957, pp. 102-105.

(7) This concerns Marxian economists, not the
rtisans of “supra-rent taxation” of the peasants,
o support their views with the concept of rent
distribution.

(8) I. Kozodoev, Differentsial’naia zemel’naia renta pri sotsializme, Moscow, 1956, p. 27.

(9) See, for example, Roland Gauk, Chastnai sobstvennost’ krest’ ian na zemliu i sotsialisticheskoe preobrazovanie sel’skogo khoziaistva v GDR, Moscow, 1958, p. 133.

(10) I. Kozodoev, Zemel’naia renta v epokhu diktatury proletariata, Moscow, 1957, p. 28.

(11) Qualitative and economic assessment of soil are necessary not only to improve the system of rent distribution, but also for the properly differentiated planning, location, and organization of agricultural production. To achieve this it is imperative to carry out the economic assessment of the land rapidly.

(12) It is characteristic that in analyzing rent distribution, I. Kozodoev totally ignores the economic law of distribution according to work, while A. Pashkov considers that when the collective farms with more fertile land have a higher income, this is quite normal and in keeping with the economic law of distribution according to work.

(13) I. Kozodoev, Zemel’naia renta v sotsialisticheskikh stranakh, Moscow, 1958, p. 20.

(14) It is totally erroneous to define as equalitarianism the creation of equal conditions of reproduction and the consistent application of the principle of distribution according to work in the collective-farm cooperative sector.

(15) Very often the difference between the rate of remuneration of labor in certain collective farms is entirely out of proportion to the difference in the quantity and quality of labor expended by the collective farmers. For example, in the Estonian collective farms situated in different soil conditions the range of fluctuation in the rate of labor remuneration is as high as 300%.

(16) Some studies have already treated the question of economic aid to collective farms in areas with poor soil and climate through the medium of redistribution of differential rent. This was suggested by Academician Strumilin (Voprosy Ekonomiki, 1958, No. 5). But there is little likelihood that redistribution of rent can be achieved through a system of voluntary mergers of collective farms. V. Rozhin (Novyi Mir, 1959, No. 10) is right in remarking that this function must be assumed by the state, but one may object to his suggestion that the latter should subsidize the farms cultivating marginal land. It is doubtful that this system would promote profitability in the collective farms. It would, on the contrary, breed parasitism, as would the implementation of Academician Strumilin’s proposals. It appears that state aid to collective farms in areas with poor soil and climate should be realized through the medium of price formation. A

sound price system which ensures a proper indemnification of socially necessary outlays, including a normal remuneration of labor in collective farms located in objectively unfavorable conditions, would enable the latter to carry out the process of expanded reproduction and to use every profit incentive without state subsidies. Collection of differential rent I by the state from the farms cultivating more fertile and better located tracts of land, besides equalizing reproduction conditions and labor remuneration, would also provide the funds needed for supporting a sound price policy.

(17) N. S. Khrushchev, The Further Development of the Collective-Farm System and Reorganization of Machine and Tractor Stations, Report to the USSR Supreme Soviet's First Session (Fifth Convocatio March 27-31, 1958. Gospolitizdat, 1958, p. 41 (Ru sian edition).

(18) Estimated cost of production (workday un is worth 10 rubles).

(19) M. Moiseev is wrong in asserting that essential differences in natural conditions exist onl between zones (Voprosy Ekonomiki, 1958, No. 7, p. 18).

(20) This shows that uniform and constant pric are quite in keeping with the mechanism of transferring to the state differential rent I.

(21) The only difference is that due to the lack an economic assessment of land, the tax rates ar differentiated only between districts.

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Mathematical Methods and the Requirements of Marxist Economics

There is hardly a problem in national economic planning, or even in the plan of a single enterprise, which can besolved without taking into account the combined influence of numerous factors. Their combined interdependence makes it necessary to treat them in combination. Inasmuch as such factors have a definite quantitative measure and the expected result also has its quantitative expression, their interconnections can be most accurately and concretely assessed only by means of mathematical methods. The need for the extensive use of mathematical methods in planning and in economic activity in general is becoming increasingly apparent to Soviet economists, including both theoretical and practical workers among them. While in the past the preparation of a plan (on a national scale, or for a single plant) was treated as the solution of an equation with many unknowns only in a figurative sense, it is now really a question of using solutions to systems of equations and other mathematical methods for the purpose of defining some of the most basic provisions of the plan, if not for determining the plan as a whole.

Hence, the great interest aroused among Sovie readers, and especially among economists activ in planning, in L. V. Kantorovich's Economic Es mates for the Optimum Utilization of Resources, issued recently by the Publishing House of the Academy of Sciences of the USSR. [See footnote left for original Russian title — Editor.]

The author of this book, a well-known Soviet mathematician, was the first to raise and solve problems of the type referred to as "linear programming." (1) Solutions of problems of this k were undertaken outside the USSR much later. book under review represents in many respects broad generalization and development of the results achieved by the author in the past. It possesses a number of unquestionable merits. The original method of solving linear programming lems is presented by the author in exceptionally simple form understandable to the ordinary eco mist. At the same time, the reader finds in the pendix a profound exposition of the theoretical mathematical principles of this method.

The book also brings out clearly the intercon tions of the criteria for the optimum character one or another variant of the plan. In particula convincingly substantiates the proposition that t variant with the highest output (given the necess

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A review of L. V. Kantorovich, Ekonomicheskii raschet nailuchshego ispol'zovaniia resursov, Publishing House of the Academy of Sciences of the USSR, 1959, 344 pp.

oportions in the assortment) coincides, in defi-
e conditions, with the variant which provides for
least expenditures. The book demonstrates at
same time the flexibility of the method, per-
tting a much wider field for its practical applica-
n. The methods used to determine the variant
ich assures the lowest total production costs may
o be used to determine the variant with minimum
penditures of electric power, or of one or another
arce material, etc. There are also many other
eresting ideas and observations.

There is no doubt that L. V. Kantorovich's book
presents an important step forward in the use of
ecise methods in economic calculations; it will
p pave the way more quickly for the practical
e of linear programming methods and of mathe-
tical methods in general. This book should help
onomists to understand that without thorough
owledge of mathematics they will not be able to
pe satisfactorily with the complex job of social-
economic leadership. The publication of this
ok should therefore be welcomed.

t is to be regretted, however, that this book is
free from serious shortcomings. The main
ortcomings have one source. If it is true that the
odern economist must possess a knowledge of
thematics, it is also true that the mathematician
o wishes to apply his methods to the economy
st be thoroughly versed in the science of economics.
a science economics is, of course, younger than
thematics, but it has a record of many centuries,
it is impossible to ignore what is has firmly
ablished in the century after the upheaval caused
science by the genius of Marx. Failing this, it is
possible to count on achieving, in science, the op-
ium results with the minimum expenditures, i.e.,
hout repeating blunders which have already been
closed in the history of science, making attempts
find new solutions for problems which have al-
dy been solved, using roads which are known to
d into blind alleys, etc.

The author of this book has not succeeded in com-
tely avoiding all these blunders. This is evi-
t in his attempt to use his old "method of multi-
er solutions," which is quite effective in solving
ne particular problems, as a basis for planning,
nomic accounting and price formation, in short,
a general foundation for all of economics. Natu-
ly, this required a corresponding change of
ms. And the result is that the modest "multi-
er solutions" used in the thirties to find the opti-
m pattern for cutting an iron sheet, or the most
ional distribution of assignments among ma-
nes or brigades (the latter task is really related
economics), appear now under the pretentious
ne of "objectively conditioned estimates" (or as
L. V. Kantorovich calls them later for brevity's sake, "o.c.e.").

In order to make clear the meaning and use of these o.c.e.'s to the reader at once, let me illustrate them by the very simple example with which the author himself begins (the method of exposition, which enables him to present the essence of everything that follows from the very outset by this simple example, deserves the highest commendation). We shall, however, simplify it further as follows: 1) by omitting the column headed "number of enterprises," and considering A, B, C, D, and E simply as five enterprises (this will change nothing in principle); 2) by distributing them in the table at once in an order which is convenient for further exposition (changing correspondingly their literal designations), and 3) instead of requiring that the first of the two items be produced in double amounts, we shall require that their amounts be equal with a corresponding 50% reduction of the capacities for the production of item No. 1 specified in the problem. Nor is anything changed by the latter condition: nothing will interfere with our counting No. 1 not by the piece, but in pairs. In fact, this condition suggests itself.

If, for example, automobile headlights and switches for them had been the items in question, it would be logical to count them in pairs, i.e., in sets for one automobile. In all the rest we repeat the author's example. The conditions of the problem may now be given in the first two columns of the following table (see table on the top of the following page).

We have slightly changed, in accordance with the above, the formulations of the headings and figures, removed three zeros in the capacity figures (indicated "in thousands" in the headings), but in the light of what follows we have retained the author's formulation, "relative labor requirements," and this alone is important here in the final analysis. If enterprise A concentrates entirely on the production of item No. 1, it can turn out 400,000 items, but if it concentrates on the production of item No. 2, it will turn out 100,000. Consequently, one unit of item No. 1 requires 1/400th of the capacity of this enterprise, and one unit of item No. 2 — 1/100, i.e., $\frac{1}{100} : \frac{1}{400} = 4$ times more. For reasons which are not at all clear, the author denotes this as relative labor requirements.

Here we can already see the weak point of the entire model. The ratio in question really corresponds to labor requirements only given a long series of additional conditions which in the final analysis amount to the following: whatever the nature of the item the enterprise is called upon to produce (or whatever the assortment in which the

Enterprises	Production Capacities (in thousands)		Relative Labor Requirements for Item No. 2, as Compared with No. 1	Accumulated Amounts of Items		Optimum Plan		Designating Letters Used by Author of Book
	For Item No. 1	For Item No. 2		No. 1	No. 2	No. 1	No. 2	
A	400	100	4	400 ↓	1725	400	–	B
B	250	75	3.3	650	1625	250	–	E
C	900	450	2	1550	1550	600	150	A
D	600	500	1.2	2150	↑ 1100	–	500	C
E	600	600	1	2750	600	–	600	D

two items are produced), it will expend in all cases the same amount of labor (i.e., there will be no change in the number of workers, in the shifts, in the length of the working day, schedule of work, composition of the workers, etc.). But the author did not think it necessary even to mention this essential condition. The impression is created that the enterprise's capacities, but not the workers, are working. This negligence in the formulation of conditions could have been forgiven if it were not for the fact that this is what is involved in one of the main (if not the main, having in mind its significance in explaining the source of the capitalist's income) disputes between Marxist and bourgeois economic thought.

Nevertheless, Kantorovich's estimates are quite useful for the solution of a particular mathematical problem. The truth is that if the task is that of producing the maximum possible amounts of the two items (provided proper proportions are observed in the assortment, i.e., given equal amounts of the two items), then it is clear that item No. 1 should be produced at enterprise A and item No. 2 at enterprise E. True, this will give us 400,000 pieces of item No. 1 and 600,000 of item No. 2. This means that more of item No. 1 are needed, and enterprise B could best of all be used for this purpose. If enterprise B concentrates on the production of item No. 1 only, we shall have a small surplus of this item (650,000 as against 600,000). If enterprise D concentrates on the production of item No. 2, we shall have 1,100,000 of these items. If, in this connection, enterprise C is switched entirely to the production of item No. 1, we shall obtain 1,550,000 pieces of No. 1 and 1,100,000 pieces of No. 2, which gives us a surplus of No. 1. It will obviously be necessary to produce the two items at enterprise C, namely, 600,000 of No. 1 (which will use up 2/3 of the capacity of enterprise C) and 150,000 of No. 2 (which will use up 1/3 of the capacity of enterprise C). We now have 650,000 plus 600,000 piec of item No. 1, a total of 1,250,000, and 1,100,000 plus 150,000 pieces of item No. 2, a total of 1,25 000. These calculations are lightened by the fac that the enterprises are distributed in the order diminishing "comparative labor requirements" o item No. 2, and it is a question of accumulating item No. 1 according to the table in a downward direction, and No. 2 — upwards, up to the line wh the two accumulated amounts "intersect." This may readily be seen in the table, where the two amounts are given. On the line between B and C we shall have more of item No. 2, and on the lin between C and D — more of item No. 1. This means that precisely C should be chosen for the production of the two items for the required rela tionship, and at the same time for the maximum amounts of both items.

It should be noted, however, that nothing at al would have been changed in this calculation if th column containing the "labor requirements ratio i.e., 4, 3.3, etc., were to be entitled as follows: "relationship between the capacity for the produ tion of item No. 1 and the capacity for the produ tion of item No. 2." This would have conveyed very accurately the meaning of these figures an would have given no grounds for any misunderstandings. But the example itself is very instru tive. All the calculations are correct, the probl is solved accurately, simply and cleverly, but a the same time negligently with regard to the int pretation of the economic contents of the magnitudes with which the operation is performed.

Let us return to the problem of finding the op mum plan. We have seen that the "lines" of ite No. 1 and No. 2 intersect at line C. Here the re tionship between the "labor requirements" (we apologize for the use of the author's term) equa

This is the o.c.e. for item No. 2 as compared
th item No. 1. Had we known this before, we
uld have found this optimum plan at once: in all
ses where the relative “labor requirements” for
m No. 2 are lower, item No. 2 should be pro-
ced, where they are higher — item No. 1 should
produced, and where they coincide with the o.c.e.,
en both items should be produced in amounts cor-
sponding to the required assortment ratio.

It would not be too bad if everything boiled down
an inaptly formulated heading in the table, or,
rhaps to the ill-chosen term o.c.e. But the entire
t of the book shows that the contrary is the case.
is occupies a place in the book which would per-
ps justify giving the whole book the title “objec-
ely calculated estimates,” and adding its present
le parenthetically. The author, who evolved a
ever method of solving particular problems, has
correctly overestimated (and this is understanda-
from a purely subjective standpoint) the role of
relationships within it, and accepted them as
jective” universal economic concepts. And this
tomatically suggested their use in place of the
ncept of value!

The author understands that this is a very im-
rtant point in his model, and he therefore tries,
it were, to make the reservation that his esti-
tes do not amount to value. Nevertheless, read-
these reservations carefully, we are convinced
t the opposite is the case. “It seems justified to
,” writes Kantorovich on p. 33, “to use in the
en circumstances the term ‘estimate,’ and not
lue’ or ‘price’ (the author is not even concerned
h the difference between these two terms —
B.), because the constructed estimates possess
some degree a limited, local character, in view
the fact that we are analyzing expenditures and
composition of the plan not for the national
nomy (for the socialist society) as a whole, but
y within the limits of the complex of enterprises
ncerned. This analysis is therefore inadequate
establishing value relationships. It should
o be noted that we are giving estimates not for
items as a whole, but only for the operations
olved in their production, and the use of the term
ice’ is not generally accepted under these cir-
mstances.”

Reading this excerpt (which is, undoubtedly de-
ive in this question) one can see very clearly
t there are two motives for caution. First, had
method been applied not only to the five men-
ned types of enterprises designed to produce
t the two mentioned items, but to all the national
nomic enterprises in general, and second, if the
servation had been made that material expendi-
es were not taken into account, then it would be possible, in the author’s opinion, to consider that the o.c.e.’s fully reflect value relationships. However, the second reservation is withdrawn at once by the statement that these estimates are given “not for the items themselves, but for net output.”

However, as soon as such economic significance is attached to these estimates, it becomes absolutely necessary to view them not from the standpoint of the technique of linear programming, but from the standpoint of economic science. The initiated reader will recognize in them at once some “old acquaintances,” marginal inputs of labor. Of course we leave it to the author’s conscience to account for his understanding of the concept of labor which, as we have seen, cannot stand up to criticism. L. V. Kantorovich’s proposal means that in order to determine the relationships between the values of all products it is necessary to use no more and no less than the well known method of determining the price of bread on the basis of the worst tract of land. This would mean applying the concept of rent to all products.

It is, of course, impossible to accept this. There are so many arguments against the author’s proposal that it is even hard to decide where to begin.

It should be noted in the first place that the o.c.e.’s are entirely unsuitable for the planned distribution of social labor. If we assume, without complicating the question with L. V. Kantorovich’s concept of “labor,” that in any case each enterprise spends a given number of working hours, 3,000 each, let us say, then the total spent on the production of 1,250,000 pieces of item No. 1 will be 3000 plus 3000 plus 2000, i.e., 8,000 hours, and on item No. 2 — 1000 plus 3000 plus 3000, i.e., a total of 7,000 hours, which gives us a ratio (given equal amounts of both items) of 7:8. But the o.c.e. ratio is entirely different (even in direction); as we have seen, it amounts to 2:1. Taking the workload of one of the mentioned enterprises (we have combined in each line a number of identical enterprises into one) as a unit of “labor input,” we will have 51 enterprises producing item No. 1 and 8 enterprises making item No. 2. The ratio will then be 51:8, which is still farther removed from the o.c.e. It is entirely unthinkable to distribute social labor by means of the latter.

Let us also assume that enterprise C (or each of the enterprises of this type), having received an order for 600,000 pieces of item No. 1 and 150,000 of item No. 2, will itself distribute the corresponding assignments among the shops, brigades and machines, trying to base this, too, on the optimum variant. It is clear that the o.c.e. will change in this case. Is it not altogether arbitrary when the o.c.e.’s are established with due regard for differences between what the author calls types of enterprises, but without any regard for distinctions between enterprises within a given type and between sections within a given enterprise?

What matters most of all in the establishment of "value relationships" is not how to appraise the cost of one item produced at a given plant, in comparison with another item which it is also producing, or could have produced. What matters is not so much a comparison of the costs of production of two kinds of carburetors, let us say, but a comparison of the costs of automobiles, electric locomotives, cotton prints, sugar, etc. According to the system of the author of this book, the solution of this problem should be as follows. Proportions should be set for the amounts of different products, whereupon it should be determined how much of each product a given enterprise could turn out, and then proceed along the line indicated above. No harm would be caused if the Trekhgornaia Cotton Mill had a zero in the column entitled "automobile production capacity," and the Likhachev Auto Plant the same zero in the column entitled "cotton prints production capacity." The trouble lies in the fact that the production lines for automobiles and for cotton prints can never intersect, and it would therefore be impossible to get o.c.e. indices to compare their costs.

Nor is that all; the point is that in the solution of a linear programming problem for determining the optimum variant for distributing assignments, we have, from the very outset, only a certain number of existing enterprises with their firmly set characteristics. But this bears little resemblance to what we have in national economic planning.

L. V. Kantorovich does not notice that for the concept of value in the Marxist sense he substitutes the relationship between expenditures on the "last" unit of both items, and involuntarily reproduces some of the principles of "marginalism."

He fails to understand this even when he is carried away by the universal economic significance of of the o.c.e. so much as to write in one of his conclusions that "in the case of a change in the required assortment, the increase in the demand for some items is connected with a relative increase in expenditures, and consequently, also in the corresponding o.c.e.; a decline in demand — with a reduction in the o.c.e." (pp. 51-52). Of course, the author sincerely wishes to adhere to Marxist concepts, but unfortunately his references to "labor requirements" are connected in his exposition with some conflicting elements of the theory of "marginal productivity." And it makes no difference whatsoever whether the reference is to the relationship between the amounts of two products produced by the "last" workers engaged in their manufacture, or the relationship between the amounts of labor spent on the manufacture of the "last" units of these products.

Marxist criticism demonstrated long ago that the marginal concept is built on quicksand if account is taken of one fact alone. This is that in reality an increase in the volume of output at an existing enterpri if it is achieved by normal means (and this is assure Kantorovich's problem, for no one is given assignm which transcend the limits of existing possibilities) ing to generally known relationships between consta and proportional costs, etc., leads not to an increase but to a decline in expenditures per unit of output. An an increase in output required by the plan transcends the limits of the possibilities of existing enterprises and is achieved through the construction of new ones, then these "last" enterprises are built, of course, according to the last word in science and technology, and this again leads to a decline in expenditure per unit of production.

It is altogether impossible to agree with the author's attempts (true, he did not carry them through) to apply the same notorious concept of "marginal productivity" to the solution of wage questions (see Chapter II, part 3). We know that the application of this marginalist concept to wag leads directly to the apologetic theory of John Bates Clark, the fallacy of which has also been fu brought out by Marxist criticism.

It should be noted that in his introduction, Academician V. S. Nemchinov, the editor of the book, correctly points out some of the mistakes i L. V. Kantorovich's book. Academician V. S. Ne chinov writes: "The author attaches to his estimates and his system of economic calculations such a broad interpretation and such general significance that it is altogether impossible to agree with him. He begins to treat them as general equivalents for the substitution of some resource by others. Based on the condition that the total estimates of output obtained with given resources should equal the total estimates of the utilized resources, the author begins to treat the estimat of the various types of output as equivalents for t substitution of some products by others. More than that, he attaches to these substitution equiv lents universal significance, demanding that production expenditures should include the utilizatio of production factors at 'objectively determined estimates.' These claims of the author are entirely unfounded."

Another very appropriate observation made by the editor of the book is as follows: "Of course, the construction of an optimum national economi

(Continued on Page 61)

LABOR AND WAGES

Sotsialisticheskii Trud, No. 4, 1960

MOSKALENKO:

rganized Recruitment of Workers

The rational distribution of productive forces on
e country's territory and the supply of manpower
r the areas of new economic development in the
ast is one of the most important tasks set before
viet national economy by the 21st Congress of the
ommunist Party. Its successful fulfillment is in-
parable from the improvement of organizational
rms and methods of planned redistribution of man-
wer.

The socialist economic system and the operation
the economic laws of socialism create all the
nditions for a most rational and planned distribu-
n and redistribution of manpower among the vari-
s branches of the national economy and the eco-
mic areas in accordance with the current tasks of
mmunist construction. This is carried out by the
onomic and organizational activities of the Soviet
vernment in training workers and distributing
em among the plants and construction projects ac-
rding to plan. In the next few years the role of
vernment and economic bodies in the distribution
manpower among the industries and areas will be
uch greater. This is due above all to the realiza-
n of a broad program for the further integrated
echanization and automation of production proc-
ses in industry and construction.

Thus, as a result of integrated mechanization and
tomation of production processes over 100,000
rkers and employees will be released in the met-
urgical and machine-building industries, and no
s than 430,000 in the light and food industry dur-
; the seven-year period. They must be used on
her jobs. The practical implementation of the
easures planned by the Party and Government for
engthening the ties between the school and life
l further developing the system of public educa-
n in our country, as well as bringing the youth
o closer contact with labor, requires that work
ces directly in production be given to students
l school children. Already in the 1959 school
ar, the new system of education was introduced
several hundred thousand students, and this
ans that the economic councils and the Executive
mmittees of local Soviets have the task of providing more places for them at the plants, construction sites, collective and state farms.

Great changes will take place in the next few years in the industrial structure. Changes in the fuel balance alone will result in a reduction of the number of workers engaged in the coal industry in some areas. Thus, in the next few years a considerable number of workers in the pits will be relieved of their jobs in the Tula Economic Area, and naturally jobs will not be available for them in their line where they live.

This is of special significance at present for the towns and areas where no expansion of new industrial construction is planned for the next few years, and where the natural growth of the employable population will outstrip the demand for additional manpower. At the same time, this demand will greatly increase in the Eastern areas where intensive development of natural resources has been planned for the immediate future.

The censuses of 1939 and of 1959 indicate a considerable change in the distribution of the population among the economic areas. On the whole, the population increased 9.5%, but in the Urals the figure was 32%; in Western Siberia, 24%, Eastern Siberia, 34%; Kazakhstan, 53%; and in the Far East, 70%. Most of the areas of Siberia, the Far East and Kazakhstan are still short of manpower. Calculations show that their requirements in manpower can be satisfied only to a small extent by the natural increase in local employable population. That is why it is a most important and pressing task to supply skilled workers to areas where there is an extensive program of developing the countless natural resources in the next few years and of creating new industrial centers.

At present, the main forms of the planned supply of manpower to the Eastern areas are: assignment of young skilled workers after their graduation from trade schools and specialized educational establishments; organized recuitment of workers for the plants and construction projects for a definite period which is specified at the signing of the labor contract; and the resettlement of families of workers, employees and collective farmers in virgin and fallow land development projects in the East from the Central, Western and Southern regions.

The following table gives an idea of the role of each of these forms in supplying manpower to the Eastern areas from 1955 to 1958 (in % of total):

***

	From Labor Reserves Schools	Organized Recruitment ("orgnabor")	Resettlement
Total sent to Eastern areas	15.5	67.7	16.8
including:			
Urals	22.8	74.6	2.6
Western Siberia	15.5	65.8	18.7
Eastern Siberia	14.1	68.4	17.5
Far East	9.7	62.5	27.8

These data reveal that in recent years the main role in the redistribution of manpower among the areas was played by organized recruitment [henceforth cited as *orgnabor* — editor], which accounted for over two-thirds of the total planned redistribution of manpower.

Orgnabor as a form of planned redistribution of manpower emerged in 1931. The vast scope of industrial construction in the years of the first five-year plans, the development of several new industries and the appearance of new industrial centers called for a systematic and increasing recruitment of manpower. In that period unemployment in the USSR was liquidated and the collective farm system triumphed in the countryside. As a result, the influx of manpower into industry and construction, especially from the rural areas, sharply declined. Under these circumstances the state could no longer rely on a natural inflow of manpower from the countryside to the towns, or from one area to another in providing industrial plants and construction projects with manpower. That is why the *orgnabor* system of recruiting manpower through the conclusion of contracts with collective farms and collective farmers was recognized as the most expedient form of providing industry, construction and transport with labor power. In the period from 1932 to 1940 up to 2.5-3 million workers were annually recruited through the *orgnabor* system, mainly from the rural areas. In the years of the prewar five-year plans *orgnabor* played an enormous role in supplying manpower to the leading industries, increasing the numerical strength of the working class, and improving the distribution of manpower in the country.

There has been a basic change in the utilization of labor resources in the postwar years. With the emergence of permanent cadres of workers in the industries and transport, less and less workers were recruited through the *orgnabor* system for limited periods. As a result, the number of workers annually recruited through *orgnabor* for the plants and construction projects decreased in con parison with the prewar period. There has been particular decline in the number of workers sent operating industrial enterprises. Thus, of 15,200 workers recruited through the *orgnabor* system i the regions of Kazakhstan, only about 18% were sent to industrial plants, 7% were sent to transpo and about 70% to construction projects. The picture was similar in the Russian Federation, Belo russia, the Ukraine, and the other republics. The was an even greater decline in the number of wor ers sent through *orgnabor* to industry and transport in 1959. This shows that *orgnabor* is no lon er the key source of recruiting manpower for industry and transport which it used to be. In the very near future it will be expedient to eliminate as a system of supplying operating plants and tra port with manpower, retaining it mainly as a source of labor power for construction. In recen years, in view of the growing requirements of the Eastern areas for additional manpower, the role *orgnabor* in the redistribution of labor power amo areas has markedly increased. In 1953 the shar of workers recruited through *orgnabor* and sent work from one area to another in the Russian Fe eration was 49.5% of the total, and in the first ha of 1959 the figure went up to 63.4%.

The composition of the workers going through *orgnabor* has undergone a substantial change in cent years. Technical progress in industry and construction, the rapid growth of labor productiv and of the population in towns and workers'

tlements have led to a broader organized re-
uitment among the urban population. In 1952 or-
bor offices were already set up in the towns and
rkers' settlements in Sverdlovsk, Cheliabinsk,
merovo, Perm and some other industrial regions,
ere in the past it had never been practiced. While in
past orgnabor involved chiefly the rural popula-
n, the emphasis has now shifted to the urban pop-
tion. In agriculture it is only practiced in the
ong collective farms with a manpower surplus.
1950 the share of the urban population in the total
cruited through orgnabor in the Russian Federa-
n was 28%; by 1953 the figure had gone up to
5% and in 1958 it was 74.3%.

There has also been a decided change in the
mand for workers with regard to their trade and
ll standards. There is a great deal of data to
w that the plants and construction sites of Si-
ria, the Far East and Kazakhstan have increasing
ed for workers of certain definite trades and
lls. For instance, the application filed by Build-
Administration No. 2 of the Krasnoiarskshakh-
troi Trust says that in the first half of 1958
re was a need for workers only in the building
des, including stone-masons, assemblymen,
sterers, etc. Of the 660 workers who arrived,
y 134 turned out to be building trades workers.
a consequence the bulk could not be used in
ir own line, and this was one of the reasons for
labor turnover at the site. At another building
st, in Krasnoiarsk Territory, 74 workers ar-
ed through orgnabor from January to April 1959.
these, only 9 had trades needed by the building
st.

The legal aspect of the relations arising between
management of the enterprises and construc-
n sites and the workers working under contract
o merits attention. The model regulations for
rkers and employees bind the management to or-
ize their work in such a manner as to provide
h worker with a job in his trade and according
his skill. At the same time, under the model la-
contract in orgnabor the worker must work well
honestly, and carry out the orders of the man-
ement. (1) This clause gives the management
right to use the orgnabor worker on any job, re-
dless of his trade or skill. This was the source
many labor disputes between workers and the
nagement at the plants and construction sites.
remove this, the worker's functions should be
cified in the contract more clearly and his
ges should also be defined in it.

Data on several regions of the Central and
stern areas indicate that at present about one-
rd of the workers recruited through orgnabor
e a definite trade and skill. But most of them
are sent to work in other trades and have to be retrained at the new place. It seems as if orgnabor acts as a leveller of trade and skill standards: each of the workers is generally regarded only as a working unit. This inflicts great harm on the distribution and use of the country's manpower. Under this system many workers lose the trade they have acquired, which is obviously wrong from the state's point of view and is at variance with the interests of the worker himself. Besides, the training of workers in new trades as a rule is accompanied by lower wages, and this interferes with their staying in one place.

I think it would be advisable to examine the problem of the list of workers' trades (in industry and transport) which, without harm to the national economy, could be attracted to construction through orgnabor. We should prohibit the recruitment as "general" workers through orgnabor of joiners, turners, combine operators, tractor drivers and workers of other trades which the national economy as a whole so sorely needs.

The reorganization of management in industry and construction and the establishment of economic administrative areas have introduced considerable changes in the planning of organized recruitment of workers. Prior to 1957, such planning was done from above, by the ministries, departments and finally in the State Economic Commission of the USSR, while the territorial and regional administrations on resettlement and organized recruitment of workers fulfilled the plans handed down to them mechanically, without taking part in their working out and without controlling the actual requirements of additional manpower in production. This had serious drawbacks. The ministries and departments did not have the precise data on the degree to which local labor resources were used, or on the actual needs of plants and construction sites for workers from other regions. As a rule these exaggerated the need for manpower by including in the lists plants and construction sites which were not in need of additional workers at all. As a consequence, there were cases in which plants and construction sites refused to take on the workers sent to them through orgnabor. At the same time, many plants and construction sites, under the "pressure" of superior organizations that tried to distribute among the enterprises all the workers included in the orgnabor plan, were forced to cut down their recruitment of local workers. As a result, the orgnabor system every year brought in tens of thousands of workers over and above the actual requirements (with due account of the use of local manpower), and this naturally led to unjustified expenditure of state funds.

The creation of economic councils and

administrative economic areas has created conditions for a considerable improvement in the planning, accounting, distribution, and more rational use of local manpower. At present, the annual and quarterly applications for orgnabor workers are, as a rule, drawn up at the plants and construction sites and submitted to the economic councils. The latter, together with the local resettlement and orgnabor organizations under the Executive Committees of the local Soviets, check the applications against the actual requirements for additional manpower, the correct use of workers sent earlier through orgnabor, and the readiness of plants and construction sites to receive a new contingent of workers.

At present, specialists and skilled workers are sent, when required, by agreement with the economic councils and other economic organizations to work in their trades in the various economic areas in accordance with their plans and requirements. This has introduced new elements into the operation of orgnabor. First, plants and construction sites receive workers of the trades and skills they require as specified in their applications. Second, workers are guaranteed work in their trades and skills upon their arrival at the place of work. Third, workers are sent not for limited periods but to settle down permanently, and their families are provided with living space. (2) This practice is very important in providing jobs for skilled workers made redundant elsewhere, in the interregional redistribution of manpower, and in the establishment of permanent cadres in the new areas.

Improvements in this field and a fuller utilization of local labor power in recent years have led to a considerable reduction in the number of workers coming through orgnabor. Thus, in 1958 less than one-third as many workers came through orgnabor in the Russian Federation and the Kazakh Republic as in 1955. The plants and construction sites now bear a greater responsibility for the quality and correctness of their applications for additional manpower, and for the correct utilization and settlement of workers arriving from other parts of the country. Orgnabor now sends workers mainly to new economic development areas. At the same time there has been a marked reduction in the so-called local or intra-regional recruitment.

But there are still serious shortcomings in the localities in orgnabor planning. In many instances applications for additional manpower are made up at the plants and economic councils without due regard for the use of local manpower. Very often workers are sent to areas where a great number of able-bodied personnel are engaged in household work or on their personal plots, while the number of workers at the plants and construction sites of the economic councils is above the planned figure. I 1958, for instance, several thousand workers we sent to the Urals from other (mainly central) regions of the country. But the plants and construc tion sites of the Urals (especially of the Orenbur Cheliabinsk, and Perm Economic Councils) had a great surplus of workers.

Economic councils, ministries and department must take better account of local manpower and possibilities of redistributing it among the plant and construction sites within the framework of a economic council and economic area. Orgnabor designed to supply workers only to deficit areas, i.e., to such regions as Irkutsk, Tomsk, Magada Tiumen, Arkhangelsk, and others. The dispatch workers through orgnabor to Sverdlovsk, Cheliabinsk and other Urals regions where local manp er resources are still untapped must be stopped considerably reduced.

Economic councils in some regions of Siberia the Far East often file inflated applications for a ditional manpower. Thus, the Omsk Economic Council requested for the third quarter of 1958 3,700 workers. At the beginning of the year the figure was cut to 2,000 and later it happened tha only 1,000 men were needed. The initial figure f the Krasnoiarsk Economic Council in 1959 was 23,100; in the course of the year it was whittled down, and in the end stood as 12,800. Even afte this the enterprises and construction sites redu the figure, for various reasons, by 2,500 worker (the Zagotles Trust, the Kraskhimles Trust, and others).

Personnel departments of some economic cou cils do not check on actual manpower needs and readiness of enterprises to receive new conting It often turns out that they are unable to receive new people because there is no housing prepare for them, or the new production sections have n been developed, or even because they are not in need of additional manpower at all. In some cas economic councils draw up their applications wi out coordinating them with the enterprises.

In the quarterly planning of orgnabor the impe ing changes in the volume of work and the resul changes in manpower requirements are not take into account. Thus, the Krasnoiarsklespromstr Trust in the town of Maklakovo was sent 550 wo ers, as applied for, in the second quarter of 195 and another 124 workers in the first quarter of 1958. Meanwhile, in the second quarter of 1958 200 workers were discharged. In the third quar of 1958 the trust received another 250 workers, specified in its application, and in the fourth qua ter there was another discharge of workers. It appears that the economic councils should take ter account of the impending changes in the vol- e of work, especially in building and assembly rk, and the consequent redeployment of person- .

f the skilled workers sent to the new construc- n projects in the East are to settle down there, y must be given jobs in accordance with their cupations, skills and experience. As I said above, se conditions are not fulfilled in all cases. For mple, in the second half of 1958 the Karagan- shakhstroi Combine received 262 skilled cutters m Tula, Kemerovo and Perm and other regions h experience in working vertical shafts and hor- ntal mine workings. Most of these men were ed in subsidiary work, mainly in earthwork. As esult many workers returned home.

pecial note should be made of the so-called lo- or intra-regional *orgnabor* which is still used recruit workers for enterprises and construc- n sites on the territory of a given region from ong the local able-bodied population.

n the prewar period the practice of concluding tracts by enterprises and construction sites h the collective farms in the vicinity was sound. that time a procedure was established under ich an *orgnabor* contract could be concluded with rkers living at a distance of more than 25 kilo- ters from the enterprise. This is now outdated, number of workers coming through intra- gional *orgnabor* has fallen considerably, but in ne of the Central and Eastern areas (Karaganda, rsk, Gor'kii and other regions) it remains an portant channel of supplying enterprises and nstruction sites with manpower. But in contem- rary conditions this is no longer justified. The erprises and construction sites can easily dis- nse with the services of local *orgnabor* bodies handle additional hiring themselves.

Under existing laws workers are paid a grant of 150 rubles on the conclusion of *orgnabor* contracts, and 300 rubles if they go to work in the North, Siberia and the Far East. The grant is doubled if the contract is signed for a term of two or more years. At the same time, construction sites in some areas, Kazakhstan, for example, have their own regulations. This lack of coordination in grants is entirely unjustified. It is time to adjust the system of grants to workers moving to the Eastern areas through *orgnabor*, with due regard for the distance of these places from the central areas, and also the climatic and other conditions.

Thus, in spite of numerous shortcomings, *orgnabor* retains its role in supplying manpower to building organizations in thinly populated areas. Experience shows that now *orgnabor* is suitable as a form of attracting workers to fulfill urgent work assignments (one to three years). But the system must be improved so as to take due account of the more rational utilization of local manpower. It must be retained, above all, to provide workers for building organizations, both skilled and unskilled, as well as workers in so-called "dying" industrial trades. Also it must be retained as a method of interregional redistribution of manpower. In this connection, local or intra-regional *orgnabor* should be abandoned altogether, in my opinion.

Literature Cited

(1) *Sbornik zakonodatel'nykh aktov o trude*, Gosiurizdat, 1959, p. 342.

(2) For the Far North and similar areas contracts are concluded with specialists and skilled workers for no less than three years.

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Kommunist, No. 3, 1960

SUKHAREVSKII:

e Working Day and Wages in the USSR

he all-round construction of a communist so- y in the USSR affords new, unprecedented spects for a further improvement in the well- ng of the people. At the dawn of communism, as social production and labor productivity keep increasing, the Soviet Union is advancing step by step in establishing the shortest working day and working week, steadily raising the real wages of the workers and employees, and paving a new, hitherto unknown, communist path in improving the well-being of the people, a path which best corresponds to the harmonious development of man and which ensures the highest standard of living in the world.

In the solution of these historic tasks, of great importance are the measures for the planned transition of the workers and employees to a seven- and six-hour working day, for a rise in and adjustment of wages in all branches and regions of our country. These measures are being carried out in accordance with the decisions of the 20th and 21st CPSU Congresses.

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When Marx discovered the secret of capitalist exploitation, he found the key to an understanding of the class essence of the struggle for a reduction in the length of the working day under capitalism. Marx showed that all working time is divided into two parts: that which is necessary and that which is surplus. No matter what the total length of the working day may be in a capitalist society, the surplus time is appropriated by the exploiting class without compensation and serves as a constant source of its enrichment. The situation is quite different in the USSR, where the exploiting class has been abolished, and where, in the final analysis, all necessary and surplus time is used to increase the wealth of the whole of society and to improve the well-being of the working people.

The capitalist is interested not in the total length of the working day as such, but in the amount of surplus time which serves as a source of surplus value. When reducing the absolute length of the working day under the pressure of the struggle of the proletariat, the bourgeoisie uses the development of large-scale machine industry in order to increase relative surplus value by decreasing the necessary time during which the worker labors for himself and increasing the surplus time, primarily by greatly intensifying labor.

Under the conditions of the general crisis of capitalism and chronic unemployment, maneuvering with an increase or decrease in the working day has become a constant, additional source of enrichment for the capitalists and a means of lowering the wages of the workers.

When establishing the general limits to the length of the working day bourgeois legislation grants capitalists: first, the right to make use of overtime work without restriction when the market situation promises good profits, and secondly, the opportunity to arbitrarily reduce working time and simultaneously wages when market conditions do not permit them to make full use of the existing production capacity and labor power.

In this connection the figures on the distributio of the number of working people in the USA acco ing to the duration of the working day in 1958 ar characteristic. Of 60 million gainfully employed people in the USA, 25 million worked 40 hours a week. At the same time, 18 million, or almost o third of the total number, worked from 41 to 90 a even more hours a week (5 million worked from to 90 and more hours a week, that is, 10 to 15 ho a day). But in that same year, 1958, 17 million p ple worked less than 40 hours a week, 7 million this number working from 1 to 21 hours. Thus, part of the working people was doomed to an unlimited lengthening of the working day, and the ot er to partial unemployment, to an incomplete working week with a correspondingly lower wage In 1958 the number of partially unemployed in th USA was greater than in previous years.

The actual duration of the working day in the capitalist world is extremely uneven among the various countries, regions, branches, enterprise and categories of workers. It depends on the sta of the labor market, on the degree of organizatio of the various sectors of the proletariat and its ability to withstand the offensive of capital. As know, most of the capitalist countries, including USA, have still not ratified the convention on the establishment of a 40-hour working week drawn by the International Labor Organization. Wherea an eight-hour working day has been legislatively tablished in the chief capitalist countries for certain categories of workers, in the colonial and de pendent countries the working day is practically limited to this very day and reaches 14 to 16 hou Even according to bourgeois statistics the worki day in the mining industry of England and Franc where working conditions are particularly difficult, is longer than in the manufacturing industr

The situation is quite different in the socialist countries. Every worker is guaranteed employment for the entire working day. As a rule, ove time work is forbidden for workers and employe It may be permitted only in special cases and wi narrow limits strictly established by law, and in each case it must be agreed upon with the trade unions and paid for at higher rates. The duratio of the working day is established in accordance with the difficulty of the work: in underground a dangerous work the working time is reduced by two, or even three hours as compared with the usual working day. Recently the working day wa cut for those who study in evening and correspo ence schools, and a similar system has been re ommended for the collective farms.

In unfolding the essence of the struggle for a in the length of the working day, V. I. Lenin wro

every worker needed it so that he would have
e "for rest and his own development, and that he
ht enjoy his rights as a person, a family man,
as a citizen" (Collected Works, Vol. II, p. 276,
sian edition). The eight-hour working day was
oduced in our country for the first time in the
ld on the basis of a decree of the Council of
ple's Commissars of the Russian Federation
ed November 11, 1917. In a socialist society the
dual reduction of the working day is objectively
essary and in the nature of things.

uring the period of the all-round construction of
munism the planned solution of this task ac-
res special significance. In the first place, the
ablishment of the shortest working day is an in-
nable link in the transition to a communist liv-
standard, which presupposes not only greater
sumption of material wealth, but also the flour-
ng of the spiritual wealth of society. A re-
ion in the working day affords more time for
sing the cultural and technical level of the work-
people and developing physical and intellectual
ities in every way. Marx wrote: "Saving work-
time is equivalent to increasing free time, that
time for that full development of the individual,
ch, in turn, as the greatest productive force,
uences the productive power of labor." Second,
eduction in the working day is one of the pre-
uisites for lightening labor, for transforming it
the primary vital need of man. Third, an in-
ase in free time will enable the people to partici-
more widely in the management of the economy
in the fulfillment of state functions.

he 20th CPSU Congress passed a decision on the
sition to a seven-hour working day, and for
kers in leading trades in underground work, to
x-hour working day. The change to a shorter
king day was begun in the coal industry of the
bas in the 4th quarter of 1956. Then, in 1957-
, the workers and employees of the other coal
ons of the country, the iron ore and coke-chemi-
industries, ferrous metallurgy, non-ferrous
allurgy, the chemical, cement, and reinforced
crete industries, and several others were trans-
ed to the shorter working day.

the 21st CPSU Congress it was decided that
the transition to a seven-hour working day
in underground work to a six-hour working
was completed in 1960, a 40-hour working
would be introduced in 1962. It is planned, be-
ing with 1964, to begin gradually transferring
kers engaged in underground work and in indus-
s with dangerous working conditions to a 30-
working week, and all other working people
35-hour working week.

uided by the decisions of the 21st Congress, the Central Committee of the CPSU, the Council of Ministers of the USSR and the All-Union Central Council of Trade Unions passed a decree on September 19, 1959, fixing the dates when the change to a shorter working day and the adjustment of wages in all branches of the national economy of the USSR were to be completed. Beginning on October 1, 1959, the workers and employees of the machine-building and oil industries began to transfer to the shorter working day and a new wage system, and they were followed by the enterprises of the cotton, linen, and the baking industries. Beginning with the second quarter of 1960 the other branches of industry in the eastern and northern regions of the USSR and in the most important industrial centers of the country (Moscow city and Moscow Region, Leningrad city and Leningrad Region, Ivanovo Region, and also building workers in a number of regions of the USSR) will be transferred to the shorter working day.

By the end of 1959 over 13 million workers and employees worked seven or six hours a day, and by the end of 1960 all workers and employees in the country will have been transferred to the shorter working day. In this connection, if we consider the privileges extended to those engaged in arduous work, the average duration of the working week will be less than 41 hours.

The average length of the working week in the USA in 1958 was actually 40.1 hours. But if we exclude the number of those employed less than 30 hours, then the length of the working week in the USA for those fully employed amounted to 45 hours. In England the workers are employed an average of 45.8 hours, in France — 46.3 hours, and in West Germany — 46.5 hours.

Thus, the transfer of workers and employees in the USSR to the shorter working day, which is now being carried out, is a big step forward in the establishment of the shortest working day in the world. The free time of the working people will be increased by one hour, and for certain categories of workers, by two hours. Calculated on an annual basis, the working people will thus receive additionally about 50 free days.

The main task which must be met now is to create the working conditions for greater labor productivity so that the workers can produce in seven hours as much as and even more than they did in eight. The experience of heavy industry shows that this is a fully practical task. In the coal industry the daily labor productivity in 1959 increased by 2% as compared with 1958, in ferrous metallurgy — by 5%, and in the chemical industry — by 5%. If we bear in mind the cut in the length of the working day, the hourly productivity of labor in these branches increased by 15 to 20%.

This tremendous economic effect was the result of the important work done by the economic councils and trade union organizations, the result of painstaking preparatory work at most of the enterprises: the technique, technology and organization of production were improved, internal reserves were ascertained and utilized, and concrete organizational and technical measures the aim of which was to raise labor productivity were drawn up with the aid of the active workers. This was the key to the successful solution of the task.

What is also of great importance is that the transition to the shorter working day in industry and construction is being carried out simultaneously with the adjustment of wages. These branches have a large number of piece-workers; but with the adjustment of wages their basic rates are being raised. An improvement in the organization of the wage system raises the material interest of the workers in an increase of labor productivity. That is why during the change to a seven- and six-hour working day, wages, as a rule, are not only not decreasing but, on the contrary, are increasing, especially the wages of the lower-paid workers. For instance, in the branches of heavy industry where these measures have been carried out, wages have increased on the whole by about 15%.

When the transition to the shorter working day is carried out in enterprises where production goes on uninterruptedly, additional workers are required inasmuch as the total production time remains what it was before, whereas the working time is decreased. It was therefore provided that such enterprises may take on additional workers. But experience showed that if the work was properly organized they could get along with the existing number of workers in many cases. For instance, at the Voronezh Synthetic Rubber Works it was planned, according to preliminary calculations, to increase the staff of workers by 300. But the rational use of internal reserves enabled the plant to transfer to the new system with the former number of workers. At many leading enterprises in ferrous metallurgy, such as the Magnitogorsk Combine and the Zaporozhstal Plant, the change to the shorter working day was carried out with additional workers numbering 35 to 40% of the estimated requirements. Many such examples could be cited. At the same time there are cases of enterprises transferring to the shorter working day and new conditions of payment without making the necessary organizational and technical preparations. One example is the Lugansk Diesel Locomotive Works. A number of shops in this plant did not fulfill their November and December plans. Conditions were not created for the fulfillment of technically valid quotas by all workers at the plant. This was reflected in labor productivity and earnings.

In 1960 the number of enterprises transferrin the new schedule will grow from month to month This makes it necessary that the preparatory wo be conducted in less time and on a higher level.

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In a socialist society wages are the chief form compensation for the expenditure of the necessa labor of the workers at state enterprises. No m ter what the mode of production, part of the worl time must be spent on creating the means of subsistence for the workers engaged in material pr duction and for their families. Marx pointed out under socialism the limits of necessary labor a extended as compared with capitalism, inasmuch labor power ceases to be a commodity, and the r terial and cultural requirements of the workers have been freed from exploitation constantly increase. Thus, compared with tsarist Russia, th real incomes of the workers in industry and construction are roughly five times higher, and that the peasants about six times higher.

As we know, under socialism, in contrast to th future communist society, the share of individua workers in the consumption fund cannot as yet b termined directly by their needs: it depends on results of each one's labor, and labor remains t means of existence. The different degree of sat faction of one's needs depends on the quantity an quality of the work. This becomes a source of t personal material interest of the working people expanding production and raising labor productiv With the rise in production the working people o socialist society receive ever greater material spiritual benefits from their work.

But while the principle of distribution accordi to work is the basic and governing one, it does r under socialism, encompass the distribution of values. From its very origin socialist society, which is based on public ownership, has showed cern for the satisfaction of a certain part of the terial and spiritual needs of people — at first th elementary needs — free of charge, regardless the labor contribution of each. If the entire wea were distributed according to one's work, and i the productive forces were not yet adequately d veloped, it might lead to a situation in which the needs of public health and of the cultural growth certain groups of the working people would suff (especially families that were poorly provided f and unskilled workers with a low labor producti ity), while other needs were satisfied.

The socialist mode of production radically changes the mutual relations of society and its dividual members. Under capitalism society is

cerned with satisfying the needs of its members;
ry one looks out for himself. Socialism creates
erent principles for the accumulation of public
lth. As production increases, as socialist prop-
y multiplies and labor productivity rises, ever
ater material resources for the satisfaction of
needs of the people are concentrated in the
ds of society.

he socialization of production and the increase
ocialist property, in turn, strengthen the spirit
ollectivism, develop the social traits of man,
extend the forms of joint consumption (the pub-
upbringing of children, the social satisfaction of
's cultural requirements, etc.). In other words,
forms of consumption being developed are those
se nature best corresponds to the direct rela-
s between society and its individual members,
ations which are based not on the principle of
ivalence, but on new principles — the direct and
stant concern of society for improving the life
ach person.

1958, of the total consumption fund in the na-
al economy, about three-fourths constituted the
for the payment of work, while the rest was
ributed regardless of one's work. Inasmuch as
t of the elementary needs of the workers in ma-
al production are thus satisfied, payment for
k under socialism is the chief but not the only
n of compensation for the expenditure of neces-
y labor.

uch has been written in our literature about the
dual nature of the transition from socialism to
mmunism. But prior to the 21st Congress of the
SU this gradualness, as applied to distribution,
interpreted to mean that gradually only the
ditions would be created for the transition from
ribution according to one's work to distribution
ording to one's needs. But as regards the dis-
ution itself, the transition from one form to an-
er was not interpreted as a gradual process but
n act that would be accomplished all at once.

this connection the question of the objective
ciples of distribution under socialism was
ed as follows: Why are the material and spiri-
values distributed according to one's work and
according to one's needs? Putting the question
his way presupposed that in a socialist society
e is only distribution according to one's work,
that under these conditions no elements of the
re communist distribution appear.

et the material of the 21st CPSU Congress and
rade N. S. Khrushchev's report showed that
e distribution according to one's work is the
f and guiding principle under socialism, right
de it and in close contact with it, free distribu-
, which does not depend on one's work, is
coming into being, growing and developing.

Hence, if one is to understand the nature of distribution under socialism the question must be posed in a new way: We must ascertain why, even under socialism, a definite combination of the main principles of distribution according to one's work with distribution regardless of one's work is objectively necessary.

The proposition that wages were the only form of compensation for the expenditure of necessary labor in state enterprises corresponded to the old manner of posing the question concerning distribution under socialism. Payments and grants made from public funds were also included in the conception of wages "in a broader sense" (see textbook Politicheskaia ekonomiia, Third Edition, 1959, p. 526).

Thus, two different forms of distribution were confused, and wages were ascribed a more all-embracing significance than they really have.

In a socialist society it is not only the limits, but also the forms of compensation for necessary labor that change: There is a specific social form which corresponds to the chief principle of distribution (according to work) and to the new form of distribution which is coming into being (regardless of the labor performed). Monetary wages correspond more fully to that part of the material and cultural values which are distributed according to the work performed, while payments and grants from social funds correspond to that part which is distributed regardless of the work done.

Let us see how these two forms of distribution under socialism differ.

Wages have long been a form of distribution according to the work performed. Can we say that the system of payments and grants from the social funds are the final form of the communist principle of distribution according to one's needs? Evidently we cannot. The transition to distribution according to needs is effected gradually, and the transitional form is distinguished by the fact that it contains elements of the old and the new, which frequently are interwoven.

Let us, for instance, take a public service like the maintenance and rearing of children in children's institutions. Some of the children are maintained in boarding schools entirely at the expense of the state. At the same time, the expenses of the children's institutions are, as yet, partially covered by the parents out of their wages. But the various groups and workers and employees do not pay an equal share of these expenses. Children who have no parents, and at the recommendation of the local organs, children of large families with low incomes, are maintained at the boarding schools at the complete expense of the state. Some parents pay a small fee; the larger the earnings, the greater the fee. Parents of large families pay less.

As a result, the real incomes of various groups of workers and employees (depending on their wages) increase at the expense of the social funds which are spent on the upbringing of the children in various amounts. It therefore follows that the principle which governs distribution through social consumption funds is no longer the principle of distribution according to one's work, nor is it, as yet, the principle of distribution according to one's needs (as some authors mistakenly assert). It is a transitional form from one principle of distribution to another, under which the satisfaction of the needs of people is effected by society more or less independently of the work performed by the people. Thus, a more rapid attainment of a certain level of income per person in each family is assured and also a certain equalization of the incomes received for work.

As for such forms of social service as free medical aid and free education in the schools, even now these are ever more closely approaching the principle of distribution according to one's needs.

Wages on the one hand, and payments and grants from social funds on the other, also differ according to the *sources* which compensate for the expenditures of *necessary* labor.

If we take the typical form of wages, that at state self-supporting enterprises, they are paid out not directly from the national consumption fund, but from the value of the product produced and sold by the given enterprise. This, however, does not mean that the amount of the wages does not depend on the size of the national consumption fund. Payment for work in state enterprises is made according to unified state basic rates and, ever more frequently, according to unified state quotas. The state plans the wage fund for each enterprise and establishes its size according to the share of the national consumption fund in the national income. In those cases in which the enterprises do not have sufficient funds to pay the workers and employees their wages in full, the state can help these enterprises through the economic council, ministry, or other organization to which the enterprise is subordinated. But later the enterprise must return these funds out of the receipts obtained from the sale of its products.

The situation is different as regards payments and grants made from social funds. The chief part of these payments and grants is given the workers and employees directly from the national consumption fund. In addition to these, there are social consumption funds at various state enterprises (such as part of the enterprise fund).

It thus follows that wages on the one hand, and payments and grants from social consumption fu on the other, reflect *relations in distribution wh differ as regards the degree of their developme* Wages reflect the relations of the workers and emp ees not directly with society as a whole, but with the spective state enterprise, and through it, with soci as a whole. On the other hand, grants and payments the social state consumption funds directly reflect relations between the individual members of socie society as a whole. (The third revised edition of the textbook *Politicheskaia ekonomiia* mentioned abov clares that wages express the relations of individu workers and employees directly with society as a w and therefore it is no mere accident that payme and grants from social funds are included in rea wages.)

Wages on the one hand, and grants and payme from social funds on the other, also differ from one another according to the *method of distribut* Wages are a form of personal income. First la bor is expended, then money is paid for its resu and only then are goods and services purchased this money. This method of distribution corresponds most fully to the principle of distribution cording to one's work. The social consumption funds do not necessarily have to be distributed through personal incomes. On the contrary, to extent that they are based on various forms of joint consumption, the values to be distributed r become not part of personal incomes, but may b used directly (as in boarding schools, sanatoriu rest homes, hospitals, and later, through free p lic catering).

At present about half of all the material and spiritual goods coming from social consumption funds are distributed in the form of money payme (pensions, temporary disability allowances, stipends). But apparently the most promising form distribution of social funds is their joint consum tion through public services, which constitutes other half of social funds.

Wages as distinct from grants and payments from social funds also differ as regards the *me nism of distribution.* Wages are inseparably bo up with commodity-money relations and are distributed in the form of money. The possibility using the monetary form arises, as we know, fr the fact that the principle of distribution accord to work implies, to a certain extent, the princip of equivalence.

The monetary form makes it possible to redu to a common measure various forms of work according to their productivity, intensity, skills, tional economic significance, working condition

. The payment of wages at self-supporting en- prises out of the receipts obtained from the sale heir products makes it possible later to control extent of work and the extent of consumption, smuch as the price of the product takes wages consideration in accordance with state quotas basic rates. That is why the payment of wages m the receipts for goods sold makes it possible ffect social control not only over the conformity he extent of work with the necessary quotas, but over the conformity of the actual payment for work with the state quotas and basic rates. ally, the monetary form of wages makes it pos- le to utilize the law of value, price and profit to rease the material interest of the workers and timulate the enterprises in lowering labor ex- ditures as compared with the average, socially essary expenditures.

istribution through social funds is not necessar- connected with the money form. Inasmuch as it not effected according to one's work, there are factors of equivalence here. About 35% of all ial consumption funds are distributed free of rge. Pensions, grants and stipends are at pres- paid in the form of money because consumer ds are, as yet, commodities.

ages and payments from social funds also differ respect to what is distributed (the object of dis- ution). Today the greater part of material val- and also some services (those which are paid) are distributed through wages. Part of the terial values which are created in the field of terial production, and to a considerable degree, vices which are created in the non-productive ere, are distributed with the aid of the social sumption funds. The basic material needs of working people are satisfied through their ges. Basically, the needs of children and, par- ly, of the aged who are unable to work are met ough wages. The payments and grants from so- l consumption funds meet the needs primarily hose who cannot participate directly in paid la- (the aged, children, etc.), and also a siderable part of the cultural requirements of entire population and expenditures for medical vices. Thus, distribution through the social sumption funds serves as distribution supple- ntary to the main distribution based on the work formed.

n 1958 215 billion rubles was paid out to the king people from the state budget and by enter- ses in the form of grants and payments, and in 9 this amount was 230 billion rubles. These ds were used for pensions, temporary disability , stipends to students, free medical aid, reser- ons for rest homes and sanatoriums which were given either free of charge or at greatly reduced rates, free tuition and free courses for the improvement of skills, aid to mothers of large families and to single mothers, and other grants and benefits. According to the plan for 1960 the amount to be spent for these purposes will reach the figure of 244 billion rubles. It is thus obvious that the state has assumed the burden of a considerable part of these expenditures, thereby relieving the families of workers and employees from meeting them out of their budgets.

Thus, there are two types of distribution and two basic social forms of distribution which correspond to them, and which differ as regards the sources of compensation for the expenditures of necessary labor, the mode of distribution, the mechanism of distribution, the object of distribution and the sphere of operation.

The form of wages, which originated under the capitalist system, is used under socialism for distribution according to work. But the socialist economy uses only the form and gives it a social content which is different in principle. It assigns to wages a different place in the process of distribution, using it to carry out the principle of personal, material interest and to attain a steady rise in the standard of living of the working people as the productivity of their labor increases. As regards distribution through the system of social services, as Lenin said, in a capitalist society this is done either through commercial enterprises or the "acrobatics of bourgeois philanthropy."

At the 21st Congress of the CPSU Comrade N. S. Khrushchev pointed out that our Party would continue its policy of raising wages and lowering prices, but that the communist method of raising the living standards of the people is, first of all, to develop the social consumption funds. This is determined by the fact that, first, it is the quickest and most economical way of attaining a higher standard of living inasmuch as it ensures a rise in labor productivity in the sphere serving national consumption, a great economy in products as compared with the petty household economy, and frees the many women formerly engaged in keeping house. Second, it is an important condition for the rational use of free time, for the all-round development of the physical and intellectual abilities of the people. Third, it is a means for the rapid attainment of the full economic equality of women and men. Fourth, this path ensures the most rational forms of communist upbringing of the children, combining productive labor with education. Fifth, it is an important method of accelerating a rise in the living standards of workers with low incomes and large families, and for equalizing living conditions in various regions. Sixth, the distribution of social consumption funds more or less independently of work performed (especially through the system of social services) is a form of transition to communist distribution.

Characterizing the significance of the sprouts of communism, Lenin described the vitality of the new forms of socially organized consumption as follows: "... what a saving of human labor, what conveniences for the consumers, what a saving of products, what liberation of women from household slavery, what an improvement in sanitary conditions are obtained under exemplary communist work, and can be achieved, can be spread to all society, to all working people!" (Collected Works, Vol. XXIX, p. 397, Russian edition).

In the period of transition from socialism to communism the social consumption funds will encompass various aspects of the life of each person in an ever greater degree. The social upbringing of children, as the chief form of their communist upbringing, various forms of social, every-day services, etc., will be more widely developed. A number of branches which cater to consumption needs will become large-scale branches of social production based on modern technique. Social and cultural branches will meet the needs of people enjoying the shortest working day in the world.

Together with the improvement of the principle of material incentives, moral stimuli to work are also being developed.

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What changes are taking place in wages? How are the conditions and nature of distribution according to work changing in the new stage of communist construction?

These conditions are determined by the development of the material and technical base, the volume and structure of production, the improvement in socialist property, and in the final analysis, by changes in the nature of work, its organization, the cultural and technical level of the working people, their attitude towards work, and labor productivity.

The new element in the principle of distribution according to work at the present stage consists, first of all, in the fact that the economic principles of differentiation in wages are changing. The degree of differentiation in the payment for work depends on certain objective conditions which cannot be ignored.

In the period of transition from socialism to communism a new type of worker of the communist society is being formed. The old division of labor is being eradicated, there is a gradual fusion of mental and physical work, and the differences between urban and rural labor (socio-economic, skills, level of labor productivity, etc.) are disappearing. The cultural and technical advance of t workers and collective farmers is being immeasurably accelerated and unskilled labor is quickly becoming a thing of the past. The all-round mecanization and automation of production and the development of communist consciousness are creating the prerequisites for the attainment of the highest possible labor productivity by every working person. At the same time, the conditions of l bor are being equalized, they are becoming lighte in all branches of endeavor, and there is a gradu levelling out of the conditions of life in the economic areas of the country. As a result of all th changes, differences in the nature of work are declining.

Under these conditions the consistent impleme tation of the principle of payment according to w inevitably presupposes not an increase but a gra al decrease in wage differentiation.

The degree of differentiation depends not only differences in the nature of the work, but also on the level of its productivity. Differences in payment for work presume that the degree to which the needs of workers are met is not the same. A the productivity of social labor increases, the ou put of each worker will approach the level necessary for the complete satisfaction of his requirements, and this will make it possible to realize t principle of material incentives with smaller differentials in the payment for work.

The degree of differentiation also depends o the part of the national income which can be set aside for the purpose of directly raising the livi standards of the people. The closer our country approaches communism, the more fully are the forces of nature and the inexhaustible resources rapidly growing socialist production placed at th service of man and the improvement of his well-being.

On the basis of these economic prerequisites by developing the social consumption funds in ev possible way, the Communist Party is pursuing policy directed towards a systematic, more rapi increase in minimum wages while simultaneousl raising the rates and salaries of the average-pa workers, a policy directed towards reducing the gap between the wages of highly-paid and low-pa workers and employees. As a result, the numbe of low-paid workers is gradually being reduced in the next few years this category of workers w completely disappear.

The changes in technique, technology and the ganization of production also require certain cha in the forms of payment for work. For instance with the use of automatic systems of machinery a

mical units in which the technological program
et beforehand and automatically controlled, a
tem of payment based on time rates and bonuses
h bonuses for uninterrupted work of the ma-
ies and machine units) is most effective. With
round mechanization of production and the unin-
upted work of complex teams, an effective sys-
of payment for work is one based on the final
ults, with premiums for the fulfillment and over-
illment of the plan by the team and the section
whole. This system of payment for work,
ch takes account of collective material incen-
s, is coming into wider use in the mining indus-
However, the chief form of payment for work
ndustry and construction is still the individual
ce-work system.

ne of the most important tasks in improving the
anization of wages is to strengthen the link be-
en wages and the entire system of cost account-
Life itself has posed the problem of making
er use of the economic levers for the state reg-
ion of wages. We must increase the material
ntives for the working people and also offer an
nomic stimulus for the enterprises so that the
rests of each worker, the enterprise as a whole,
the general state interests merge, so that they
be directed towards improving the technique
economy of production. To attain this, however,
necessary to solve a number of organizational
economic questions which require special study.
st, such forms of payment for work must be
l as will make the wages of all workers and em-
ees ever more dependent on the economic in-
s of the work of enterprises; second, the sys-
of prices, credit and manner of compensating
expenditures on new machinery must be im-
ved so that it will be profitable for the enter-
e to produce it.

n important economic task, one which
faces us, is that of ensuring a more rapid
in labor productivity than in the payment for
r. However, the changes in the forms of pay
the factors governing the rise in labor produc-
y must be taken into consideration when the
crete relation between these two is determined.
l wages are raised by increasing money wages
decreasing prices. The relative importance of
e two methods of increasing wages cannot be
cted arbitrarily. When money wages are raised
increase can be directed in favor of a definite
p of workers and employees, first of all those
e low-pay categories. A decrease in prices is
rable to all workers, employees, collective
ers, and those who do not work (such as pen-
ers, people who receive stipends, etc.). In this
ection, it should be pointed out that when there is a general decrease in prices those who buy more receive the greatest benefit. If the wage system is properly organized, when money wages are raised, he who works best receives more. A reduction in prices affects all buyers in one or another degree. By means of money wages, skilled workers, those who work under difficult conditions, and those who work in the leading branches and economic areas are ensured a higher pay. Only if all these factors are taken into consideration is it possible to correctly determine the necessary relationship between the rise in money wages and the reduction in prices.

In the postwar period prices were cut several times. This was the chief factor in the rise of real wages from 1948 to 1953. The cut in prices in this period was responsible for three-fourths of the rise in the real wages of workers and employees. In the years that followed, in connection with the need to adjust the system of pay for work and to decrease wage differentials, the chief method of raising real wages was that of increasing money wages. Thus, in the period between 1953 and 1958 half of the total rise in real wages resulted from an increase in money wages (in the current seven-year period this share will increase to three-fourths).

In the future, technical progress will create the conditions for a further cut in prices. At the same time, the preferential rise in social consumption funds will be ensured. Hence, the rise in labor productivity will have to exceed the rise in money wages even more. At the same time, the difference between the rate of increase in labor productivity and in the real incomes of the workers and employees may possibly be somewhat lessened as a result of the accelerated rise in the consumption fund.

In recent years, up to the very moment when work was undertaken to adjust money wages in 1956, wages were increased chiefly with basic rates and salaries remaining fixed, the increase in the consumption fund being used primarily to cut prices. However, this practice also had negative results: a gap formed between the actual money wages, which kept rising year by year, and the more or less fixed basic rates and salaries. This led to the use of all kinds of supplements to the basic rates and salaries, great overfulfillment of low quotas, excesses in the system of bonuses, the use of various departmental coefficients, and the like. As a result, that part of the wages which was paid according to the basic rates declined, thus lessening their dependence on labor productivity and the skills of the workers, and incorrect relationships in the payment for work resulted at enterprises, branches of industry and districts. The situation was aggravated by the existing branch system of management in industry and construction, which frequently involved the departmental solution of wage questions. The reorganization of management in industry and construction revealed these defects and made possible their eradication.

Thus, life itself has made it necessary to take measures to improve the entire wage system.

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Work directed towards the general adjustment of wages in the national economy was begun during the 4th quarter of 1956 at the directives of the 20th Congress of the CPSU, and according to the decisions of the 21st Congress of the Party it is to be completed in all branches and areas of the country in 1962. The task consists not only in overcoming the defects in the payment for work which accumulated in recent years, as well as the disorganization in the payment of work and elements of wage-levelling which still existed in some places, but in organizing the wage system in accordance with changes in the material and technical production base and the character of the work.

Between 1956 and 1959 the wages paid in the coal industry, in ferrous and non-ferrous metallurgy, in the chemical and cement industries and in the production of reinforced concrete were adjusted. Since October 1, 1959, this work has been under way in the machine-building and oil industries. The adjustment of wages has begun in the cotton, linen, and bakery industries, and is to begin in other branches. This work is being conducted in the northern and eastern areas first of all, as well as in the most important industrial centers of the country.

In 1960, simultaneously with the transition to the shorter working day, the adjustment of wages in industry and construction should be completed, and it should then be started in transport and on state farms. By the end of the year over 30 million workers and employees will have been transferred to new wage systems. In 1961 and 1962 wages will be adjusted in other branches of the national economy. The year 1960 will prove a decisive one as regards the adjustment of wages. Considerable experience has already been accumulated in introducing new wage systems in heavy industry, and this experience should be taken into consideration in the future.

Before the adjustment of wages began there were several thousand basic rates in industry for the first wage category and about 2,000 rate scales. An analysis made by the State Committee on Questions of Work and Wages of the Council of Ministers of the USSR showed that with the proper grouping of branches and the introduction of a minimum wag of 400 to 450 rubles it is possible to establish a proximately 40 rates for the first wage category for all branches and types of work and six rate scales in all.

Naturally, the basic rate for the first wage ca gory (for the payment of workers of the lowest skills) cannot be identical in all branches and ty of work. It is determined by the conditions of w and the national-economic significance of the branch. In 1956 the minimum wage was raised 270-350 rubles without any increase in the basic rate for the first wage category, and workers w lower rate than this received an additional paym When wages were adjusted in 1956-1958 the rates of pay for the first wage category were establis at the level of this minimum. In 1959 to 1962, w the transition to a minimum of 400 to 450 rubles the rates of pay for the first wage category will correspondingly increased. This will also be th case in 1963 to 1965 when the minimum is raise to 500-600 rubles.

Besides basic rates many workers receive bo nuses, and piece-workers receive additional pay ments for the overfulfillment of their quotas. R gional coefficients exist in a number of districts Hence the actual minimum wage exceeds the ind cated by 15 to 20% and even more.

As a result of the adjustment of wages (in 195 to 1962) the basic rates for the first wage category in the light and food industries will amount approximately 400 to 450 rubles, in the manufac turing branches of heavy industry — 500 to 600 bles, and in the mining branches — 500 to 700 r bles. It thus follows that in certain branches th lowest basic rate for the first wage category in main types of work will exceed the minimum by more than 50% and the actual wages by almost 100%.

Different basic rates are set within branches well, depending on the conditions of work. For stance, in machine-building the basic rate for t first wage category of piece-workers engaged i cold work is 530 to 560 rubles, and in hot work 610 to 640 rubles a month.

The rise in workers' basic rates makes it po sible not only to introduce a new, higher minim wage, but also creates important economic cond tions for the wide introduction of technically va output quotas and an increase in the share of th basic rate in actual wages. For instance, in branches of heavy industry where wages have b adjusted the share of technically valid output qu has risen on the average to 75%. Whereas the quotas were fulfilled before this by an average almost 140%, after the adjustment of wages the being fulfilled by about 113%. The ratio of ba- rates to actual wages reached the figure of . It should be noted that the opportunities for a cal improvement in quota setting created by the in basic rates are not being fully utilized every- re. This applies particularly to the auxiliary os at metallurgical, chemical and cement plants, also to enterprises producing reinforced con- e, where excessively low output quotas are still orce in a number of cases.

efore the adjustment of wages in industry the t diverse basic rate scales were in force, vary- from 6 to 14 wage categories, with the ratios of eme rates differing from 1:2 to 1:4. Now a l of 6 basic rate scales will be established. The f scale will have six categories, with a ratio of eme rates of 1:2. It will be applied in machine ding, the building materials industry, the oil, ulose and paper, and wood-working industries, per-cutting, and a number of other branches. In light and food industries a six-category basic scale is being established with a 1:1.8 ratio for extreme categories. Thus, wage differentials orkers depending on their skills are being ntly reduced and the existing basic rate scales being substantially unified. The number of ba- rate scales will probably be reduced even fur- . As wage differentials are reduced it will be- e possible to adopt a single wage scale and a le system of salary rates which will embrace branches of production.

ne introduction of new wage scales requires h work in classifying both the work and the kers. With the adjustment of wages, new uni- rate-and-qualification handbooks for the vari- branches are being drawn up instead of the for- departmental handbooks, which caused great rganization in the payment of labor. For trades are found at enterprises of various branches, ngle rate-and-qualification handbook is being oduced.

nere were cases in heavy industry and at ma- e-building enterprises when, during the adjust- t of wages, wage categories were assigned for ain work and workers not according to the new -and-qualification handbooks, but arbitrarily. a situation cannot be permitted.

ne introduction of technically valid output quotas new rate-and-qualification handbooks entails y difficulties. At certain enterprises, especi- in machine building, before the new conditions rning the payment for work were introduced ssively low output quotas were overfulfilled by e workers three, four and more times, and cer- workers were placed in categories two, three and e grades above the appropriate ones. This led to unwarranted high earnings for these workers. When wages are being adjusted these shortcomings should be eradicated.

As regards the forms of payment for the labor of workers, before the adjustment of wages about 70% of the industrial workers were paid on the piece-work basis, and of that number about 40% were paid according to the progressive piece-work system, which in most cases is economically disadvantageous. When the new drafts were drawn up, the simplest, most understandable forms of payment were sought so that the connection between the results of one's work and the payment for it would be obvious. At the same time, changes in the material and technical production base and in the character of the work at the present stage were, naturally, taken into consideration.

In adjusting wages in heavy industry progressive piece work was eliminated almost everywhere. In its place, direct piece-work or the piece-work-bonus system was introduced. The proportion of piece workers paid according to the piece-work-bonus system in the branches of heavy industry in which the wage system has been adjusted, has increased from 5 to 40%. At the same time, the proportion of time-work has increased somewhat, especially in the chemical industry from 41 to 64%, and in non-ferrous metallurgy from 37 to 58%. In the other branches of heavy industry about one-third of the workers will continue to be paid according to time-work, with the time-bonus system finding greatest application. This ensures the interest of the workers in improving their qualitative indices. Thus, of the total number of time-workers in the cement industry the number of those who are paid according to the time-bonus system has increased from 13 to 58%. But while this system is applied where it best corresponds to the new technique and organization of labor, an unjustified reduction in piece-work payment, as was the case at various chemical plants, must not be permitted.

In order to establish a correct relationship between the payment of workers, engineering-technical personnel and employees, when the wage system was being adjusted it was decided that the salary of a first category foreman of a section would be higher than the rate of the most highly skilled worker. The salary rates of all other categories of engineering-technical personnel were determined in relation to the salary of the foreman taken as unity. At the same time, instead of the existing difference of three to five times between the salaries of the foreman and the director of an enterprise, systems of salaries are being introduced in which this is, as a rule, decreased to a difference of two to three times.

The systems of salary rates for directors and engineering-technical personnel are now being organized according to groups of branches, and are taking the place of over 700 systems of salary rates which were drawn up on the departmental principle. The salary rates of directors and engineering-technical personnel are differentiated according to the categories of enterprises, depending upon the scale and complexity of production, with the amount of work and the degree of responsibility of the directors being taken into consideration. The pay of employees at all enterprises is based on two levels: a higher one for the most important branches, especially for heavy industry, and a lower one for the other branches. Seemingly, as time passes a single level of salary rates for employees will be established.

The new salary rates for engineering-technical personnel should not be introduced mechanically, as was the case at various enterprises. Serious preparatory work must be conducted which will ensure a simplification in the structure of the management of production. In particular, it is necessary more actively to introduce a structure of management without separate shops. Computing and calculating work must be mechanized, and the documentation and the handling of documents must be simplified.

Most branches of production introduced a new system of bonuses beginning October 1, 1959 for the fulfillment and overfulfillment of the plan for lowering production costs (expenditures per ruble of commodity production), and, in the leading branches of heavy industry, for the overfulfillment of the production plan as well. The multiplicity of bonus systems, which gave rise to excesses in the payment of labor, is thus eradicated, and the maximum extent of bonuses is established within the limits of four- to six-tenths of the salary rate per month (depending on the branch of production). As we know, until now bonuses were paid for the fulfillment and overfulfillment of the plan on the basis of quantity indices. The new system undoubtedly is a step forward and will contribute to a rise in the profitability of production. But the greatest material interest among the workers of enterprises — the maximum use of the internal reserves of enterprises — will be attained, apparently, when the enterprises will be given long-range plans with the task assigned by years, and when bonuses will be paid for improving the indices of plans which establish quotas for a long period.

The June Plenary Session of the Central Committee of the CPSU posed the task of creating economic stimuli for enterprises and enhancing the material interest of the working people in the development of new technique and the technical improvement of production. The existing system of incentives h become antiquated in many ways and does not co respond to the new conditions of managing the ec omy. The State Committee on Questions of Labo and Wages of the USSR Council of Ministers, joi ly with other organizations, has now drawn up pr posals for an improvement in the system of stim lating enterprises and of material rewards for th working people.

As a result of the adjustment of wages the rela tionships between the pay of various categories c workers and employees are changing. The numb of workers and employees who receive less than 500 to 600 rubles a month has decreased, and the gap between the earnings of the lower-paid and t highly-paid has become smaller. Regional diffe ences in wages are also being reduced. Many co efficients and additional payments, established a time when certain districts were not as yet developed, have now become out-of-date and shoul naturally, be abolished. But the main thing is no introduce new coefficients in place of the old. So cial forms of consumption must be developed, go living and cultural conditions must be created in all parts of the country; these areas must develo their own production facilities which will amply meet the needs of the working people as regards consumer goods.

All of these changes in the organization of wag as the experience of heavy industry shows, have favorable effect on the fulfillment of the national economic plans, the rise in the volume of produc tion, and the increase in labor productivity.

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The improvement of the system of distributio the period of the all-round construction of a com munist society means a gradual transition from cialist equality to communist equality.

Marxism-Leninism teaches that under sociali conditions class inequality is excluded. As rega the share which each receives from society in th distribution of products, a certain inequality in i comes based on distribution according to work i inevitable in the stage of socialism, inasmuch a people differ according to their talents and abili to work, according to their qualifications and th composition of their families. There are certai differences between distribution at state enterprises and at collective farms. Lenin pointed o that "it is absurd to expect an equality in the strength and abilities of people in a socialist so ciety" (*Collected Works*, Vol. XX, p. 128, Russi edition). Differences in the work itself and in s (which create an important basis for unequal pay unequal work), and differences in the compositi of families (which condition unequal incomes an rent levels of consumption per member of the ly — these are quite a different matter.

e now see that the experience of socialist conction affords the necessary material to dete e the concrete ways of gradually lessening both cts of this actual inequality on the basis of the istent fulfillment of the principle of distribu according to work and the ever greater develent of the social consumption funds. As the omy of the collective farms develops and colive farm property is gradually transformed into public property, differences between distribution at state enterprises and collective farms will vanish. At the same time, the realization of the principle of material interest contributes to a rise in labor productivity and an increase in socialist production.

Thus, the improvement of distribution under socialism will serve as an important condition for the attainment of abundance and the complete well-being of all members of the future communist society.

DIARSKII (Continued From Page 44)

is an intricate problem which may be formu d and solved mathematically, provided there are r-cut economic prerequisites and formulations. r all, in bourgeois political economy as well, epresented by the purely mathematical (Laue) school and by its modified Anglo-American n, mathematicians also seek to maximize a cer 'function of general utility,' or 'function of satction.' But this function has nothing in common matters of national economic effectiveness, the development of a country's productive es, and it is not realized in concrete reality."

ll that has been said here is so serious that e is no need to dwell on any other, minor shortings of the book.

hat is the result? The result is briefly as ows: A book by a brilliant mathematician, which ains brilliant solutions to a number of practical problems, suffers because of his obvious disregard of economic science. Its author repeats mistakes which have been uncovered by economics a long time ago. All this is added confirmation of the correctness of the position upheld by this journal: Developing and boldly carrying into practice mathematical methods of economic analysis and planning, we must not divorce ourselves from economic theory, we must not detach ourselves from it and enter a special science, "econometrics," but we must proceed only on the basis of the sound foundation of Marxist-Leninist political economy.

NOTE

(1) L. Kantorovich, Matematicheskie metody organizatsii i planirovaniia proizvodstva, Leningrad State University, 1939.

GOVERNMENT DECREES

Promyshlenno-Ekonomicheskaia Gazeta, May 8, 1

Decrees of the USSR Supreme Soviet, May 7, 1960

Law on the Abolition of Taxes on the Wages of Factory and Office Workers

The Supreme Soviet of the Union of Soviet Socialist Republics notes that in accordance with the decisions of the 21st Congress of the CPSU and on the basis of the successful fulfillment of the national economic plans, an extensive program for raising the living standards of the Soviet people is being carried out in the USSR. The transfer of factory and office workers in all branches of the national economy to a seven-hour work day and of workers in the leading trades engaged underground to a six-hour working day will be completed in 1960; measures for increasing and adjusting wages of factory and office workers are being implemented in a planned manner; there is a considerable increase in the output of consumer goods and an improvement in cultural and public services to the working people; housing construction is developing on an ever-increasing scale.

In recent years measures have been carried out to lower taxes on the population: the agricultural tax has been reduced by two and a half times; collective farmers and a considerable part of factory and office workers have been exempted from the tax on bachelors, single persons and citizens of the USSR with small families; the minimum wage exempted from taxation has been raised.

At present, measures for the development of the national economy and culture and for improving the well-being of our people are being provided for in our country mainly from the accumulated savings of socialist enterprises. Along with the fulfillment of the Seven-Year Plan these savings will accordingly increase steadily.

In order to further improve the living standards of the working people, the Supreme Soviet of the Union of Soviet Socialist Republics decrees:

Article 1.

To discontinue the levying of the income tax and the tax on bachelors, single persons and citizens of the USSR with small families, on factory and office workers receiving at their main place of work wages of:

up to 500 rubles per month — as of October 1, 1960

up to 600 rubles per month — as of October 1, 1961

up to 700 rubles per month — as of October 1, 1962

Article 2.

To reduce by an average of 40% the existing r of the income tax, and the taxes on bachelors, si gle persons and citizens of the USSR with small families, on the wages and salaries of factory an office workers at their main place of work, withi the following time limits:

As of October 1, 1960, on earnings from 501 t 600 rubles a month;

As of October 1, 1961, on earnings from 601 t 700 rubles a month;

As of October 1, 1962, on earnings from 701 t 800 rubles a month;

As of October 1, 1963, on earnings from 801 t 900 rubles a month;

As of October 1, 1964, on earnings from 901 t 1,000 rubles a month.

Article 3.

To abolish completely as of October 1, 1965 t levying of the income tax and taxes on bachelors single persons and citizens of the USSR with sm families, on the earnings of factory and office workers. Moreover, the levying of an income ta on factory and office workers with basic wages salaries of up to 1,000 rubles a month will be co pletely discontinued, inasmuch as their take-ho pay will be increased by the entire sum of the ta deduction; the levying of an income tax on facto and office workers with basic wages and salarie of from 1,001 to 2,000 rubles a month will be di continued, with take-home pay increasing as ind cated for the following groups of wage and salar rates:

from 1,001 to 1,200 rubles a month — an aver of 79% of the tax on these wages and salaries;

from 1,201 to 1,400 rubles a month — an aver of 56% of the sum of the tax on these wages and sala om 1,401 to 1,600 rubles a month — an average 9% of the sum of the tax on these wages and ries;

om 1,601 to 1,800 rubles a month — an average 5% of the sum of the tax on these wages and ries;

om 1,801 to 2,000 rubles a month — by 10% of sum of the tax on these wages and salaries.

he basic wages and salaries of these factory office workers shall at the same time be low- l by an amount corresponding to the remaining unt of the tax on these basic wages and salaries.

he levying of an income tax on factory and of- workers with basic wages and salaries of more 2,000 rubles a month shall be stopped, with a ultaneous lowering of basic wages and salaries n amount corresponding to the entire sum of the on the basic wages and salaries.

he levying of the tax on bachelors, single per- s and citizens of the USSR with small families l be abolished completely at the expense of the e for factory and office workers.

Article 4.

o stop the levying of the income tax and taxes on helors, single persons and citizens of the USSR small families, on the earnings of literary and workers as of October 1, 1965 while corre- ndingly lowering the size of royalties and other uneration according to a procedure to be estab- ed by the USSR Council of Ministers.

Article 5.

accordance with articles 1 and 3 of this Law last deduction of taxes from factory and office kers is to be made from earnings for September he corresponding year.

Article 6.

his law is also meant to cover servicemen, stu- s, lawyers, handicraftsmen and artisans belong- to cooperatives who pay income tax on the same s as factory and office workers.

w on Completing the Transfer of All Factory and Office Workers to a Seven- and Six-Hour Work Day in 1960

he Soviet People, carrying out the historic decisions of the 21st Congress of the CPSU, have achieved outstanding successes in developing the socialist economy and considerable improvement in the living standards and cultural level of the working people.

The enormous achievements in developing the national economy and in increasing the productivity of social labor ensure the opportunity for the further gradual reduction in the work day and the work week.

The decisions of the 21st Congress of the CPSU projected the transfer of factory and office workers to a seven-hour work day, and of workers in the leading trades engaged underground to a six-hour work day, this schedule to be completed in 1960, the full transfer of factory and office workers to a 40-hour work week in 1962, and starting with 1964 their gradual transfer to a 30- to 35-hour work week. As a result of this, the USSR will have the shortest work day and the shortest work week in the world. This will be the greatest victory of the Soviet people and will reflect the basic advantages of a socialist society.

The decisions adopted by the Communist Party on the gradual reduction of the work day are being steadily carried out. The reduction of the work day is being implemented without reducing the wages of factory and office workers.

The Supreme Soviet of the Union of Soviet Socialist Republics decrees:

Article 1.

To approve the measures elaborated by the Central Committee of the Communist Party of the Soviet Union, the USSR Council of Ministers and the All-Union Central Council of Trade Unions and which are at present being carried out for the transfer of factory and office workers to a seven- and six-hour work day and for an adjustment of wages.

Article 2.

To establish that the work day for all factory and office workers be not more than seven hours and for workers in the leading trades employed underground not more than six hours.

To complete the transfer of factory and office workers to a seven- and six-hour work day.

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